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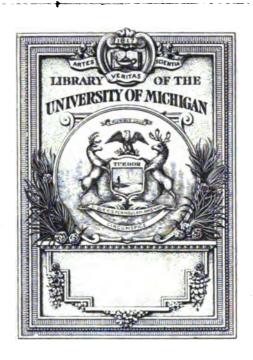
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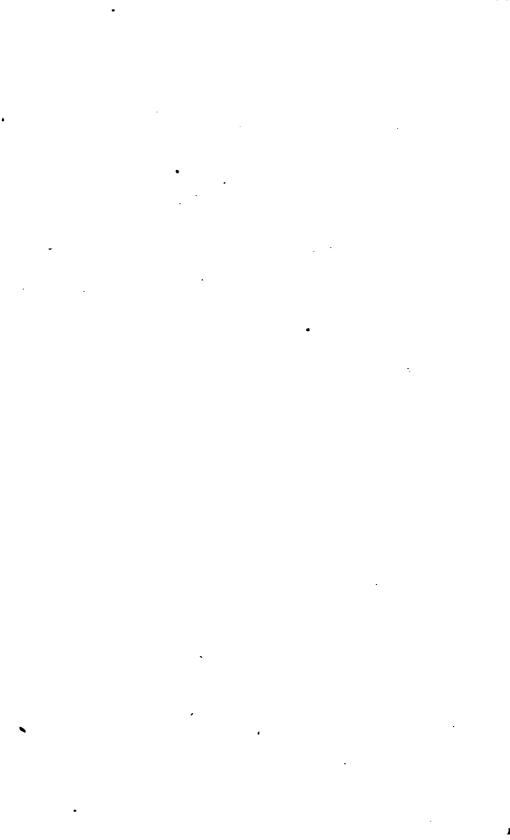
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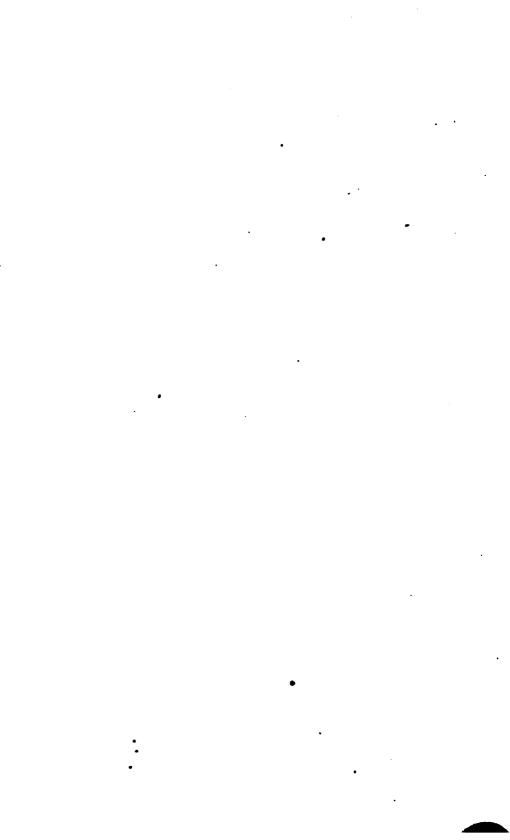


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## PUBLIC DOCUMENTS

OF

#### MASSACHUSETTS:

BEING THE

## ANNUAL REPORTS

OF VARIOUS

Public Officers and Anstitutions,

FOR THE YEAR

# 1871.

PUBLISHED BY THE SECRETARY OF THE COMMONWEALTH,
Under authority of Chapter 4 of the General Statutes.

Vol. I.

Nos. 1 to 4.

BOSTON:

WRIGHT & POTTER, STATE PRINTERS,
79 MILE STREET (CORNER OF FEDERAL).

1872.



#### PUBLIC DOCUMENTS

FOR THE YEAR

#### 1871.

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  - 2. Report of Secretary of the Board of Education.
  - 3. Report of State Librarian.
  - 4. Report of Secretary, of the Board of Agriculture.

# vol. (qı

- No. 5. Report of Treasurer of the Commonwealth.
  - 6. Report of Auditor of the Commonwealth.
    - 7. Report of Adjutant-General of the Commonwealth.
    - 8. Report of Commissioner of Savings Banks.
    - 9. Insurance Commissioner's Report. (Part 1, Fire and Marine.)

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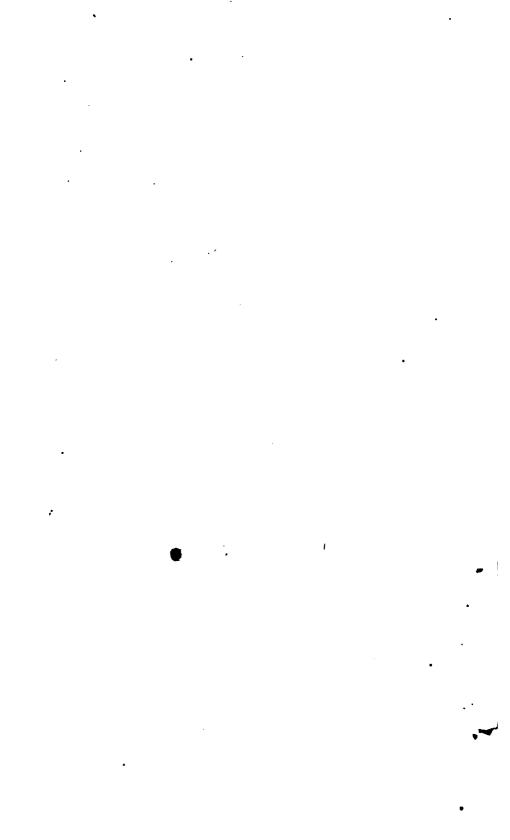
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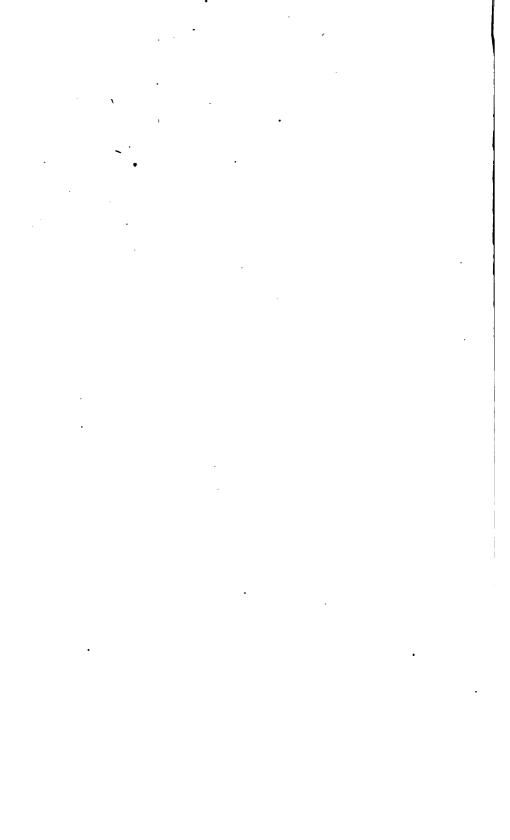
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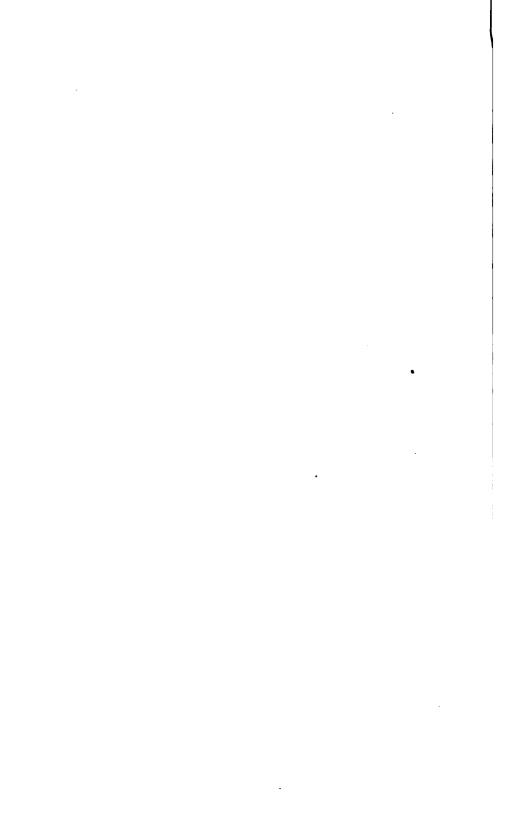
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# . TWENTY-NINTH REGISTRATION REPORT. 1870.



#### TWENTY-NINTH REPORT

TO THE

#### LEGISLATURE OF MASSACHUSETTS

RELATING TO THE

# Registry and Return

OF

# BIRTHS, MARRIAGES AND DEATHS,

IN THE

#### COMMONWEALTH,

For the Year ending December 31, 1870.

PREPARED UNDER DIRECTION OF THE SECRETARY OF THE COMMONWEALTH.

WITH EDITORIAL REMARKS

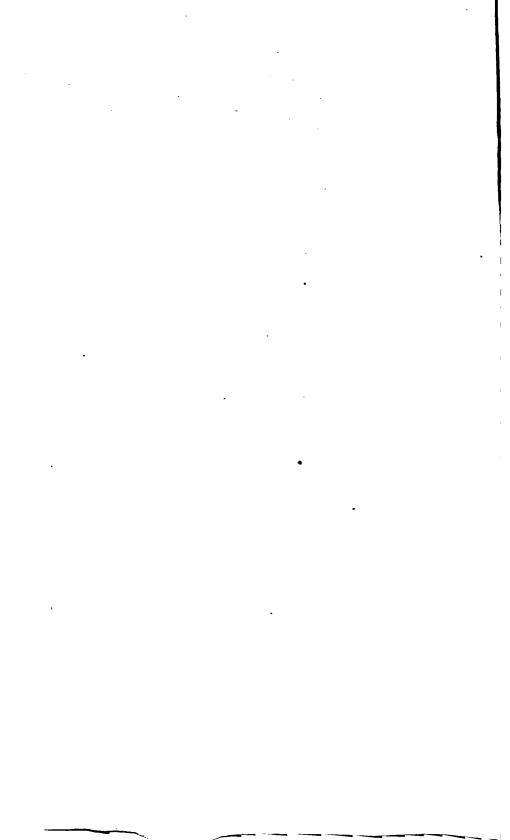
BY GEORGE DERBY, M. D.,

Professor of Hygiene in Harvard University, and Secretary of State Board of Health.

BOSTON:

WRIGHT & POTTER, STATE PRINTERS, 79 MILE STREET (CORNER OF FEDERAL).

1872.



# Commonwealth of Massachusetts,

SECRETARY'S DEPARTMENT, BOSTON, March 12, 1872.

To the Honorable Senate and House of Representatives.

In conformity with the General Statutes, I have the honor to submit herewith the Twenty-Ninth Annual Report relating to the Births, Marriages, and Deaths occurring in Massachusetts during the year 1870, and returned from the several cities and towns according to law.

In addition to the usual tables the present document presents features of special interest in the tables of the United States Census of 1870, several of which appear in these pages, and some of them printed for the first time from the manuscript copy forwarded from Washington through the courtesy of Gen. Francis A. Walker, Supt. U. S. Census.

The editorial comments and observations constituting the introductory portion of the present Registration Report have been furnished by Dr. George Derby,

Secretary of the State Board of Health, and Professor of Hygiene in Harvard University, and will be found both interesting and instructive, particularly in relation to matters connected with the recent United States Census.

Respectfully submitted.

OLIVER WARNER,

Secretary of the Commonwealth.

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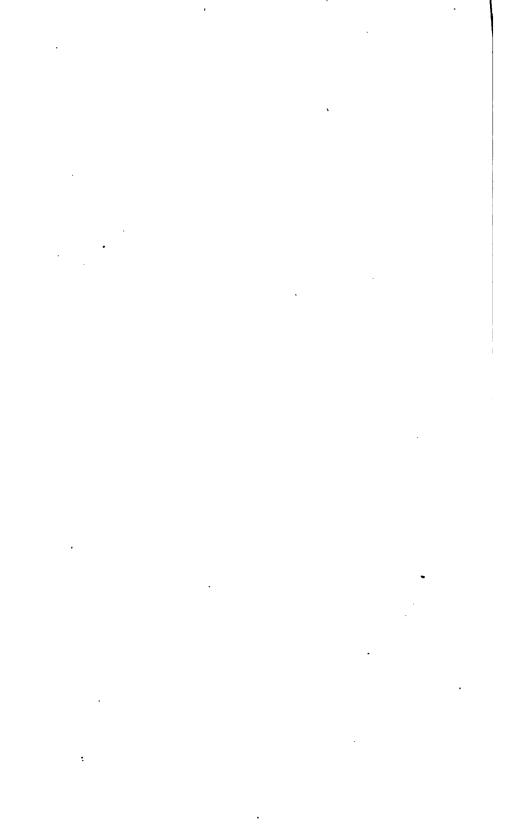
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#### TWENTY-NINTH REGISTRATION REPORT.

#### (1870.)

The accompanying tables exhibit the results of registration in Massachusetts for the year 1870, and represent the records of births, marriages and deaths in all the cities and towns of the State. An examination of their details and a comparison with the results reported in previous years cannot fail to suggest deductions of interest, not only to the statesman and the statistician, but to all who are in any way connected with matters pertaining to State hygiene.

By the first table, which gives a summary statement, it appears that there have been recorded 38,259 births, 14,721 marriages and 27,329 deaths, an aggregate of 80,309, or 3,288 more than during the year 1869.

If a comparison be made in each of these divisions of births, marriages and deaths, with the record of the previous year, it will be seen that

The births have increased by	•	•	2,118
The marriages have diminished by .	•		105
The deaths have increased by			1.275

The number of births is greater than has ever before been reported. The deaths are more numerous than in any previous year, except 1863 and 1864. The marriages, although less in number than those reported the year previous (where the number was considerably in excess of former years), are somewhat more than the average number for the past fourteen years.

The natural increase of population, or excess of births over deaths, is 10,930, or 843 more than in 1869.

The daily natural increase is an average of 29.9.

One living child was born to every 38.09 persons; one person in every 49.49 was married, and one person in every 53.33 died.

The daily average of living births was	104.82
The daily average number of marriages was.	40.33
The daily average number of deaths was .	74.87

The rates of births, marriages and deaths are as follows:-

Births,	•	•	26.25 to	1,000 of	population.
Marriages,		•	20.20	"	66
Deaths.			18.07	66	"

Excess of Birth-rate over Death-rate, 8.18 in a thousand, or .818 of one per cent.

This general result must be regarded as satisfactory. It will be seen by the next table that the excess of births over deaths, which was reduced during the war to less than 2,000 (in 1864), has now reached nearly 11,000.

TABLE showing the number of BIRTHS, MARRIAGES and DEATHS Registered in Massachusetts during the past fourteen years.

YEAR	YEARS. Births.		Marriages.	Deaths.	Excess of Births over Deaths.	Births to 100 persons.	Deaths to 100 persons.	Excess of Births in 100 persons.	
 1857,		85,320	11,739	21,280	14,040	3.01	1.82	1.19	
1858,		34,491	10,527	20,776	13,715	2.89	1.74	1.15	
1859,		35,422	11,475	20,976	14,446	2.92	1.73	1.19	
1860,		36,051	12,404	23,068	13,983	2.98	1.87	1.06	
1861,		<b>35,44</b> 5	10,972	24,085	11,360	2.86	1.96	-90	
1862,		32,275	11,014	22,974	9,301	2.62	1.86	-76	
1863,	.	30,314	10,873	27,751	2,563	2.42	2.22	-20	
1864,		30,449	12,518	28,723	1,726	2.42	2.28	·14	
1865,		30,249	13,051	26,152	4,097	2.38	2.06	.82	
1866,		34,085	14,428	23,637	10,448	2.61	1.81	-80	
1867,		35,062	14,451	22,772	12,290 -	2 61	1:69	.92	
1868,		36,193	13,856	25,603	10,590	2.62	1.85	.77	
1869,		83,141	14,826	26,054	18,087	2.54	1.83	·71	
1870,		38,259	14,721	27,329	10,980	2.62	1.81	-81	

#### POPULATION.

Since the publication of the Registration Report for 1869, the official census of the State by the United States government has been completed, and although not published in full is available for the purposes of the present work. It is, of course, obvious that these figures will enable us to arrive at conclusions which are more positive and reliable than those of the reports of some previous years which were necessarily founded on the State Census of 1865.

The total population of the State is 1,457,351. The gain or loss in population in five years, and in ten years in the several counties is shown in the following table:—

POPULATION	bу	Counties.
------------	----	-----------

COUNTIES.	1860.	1865.	1870.	1 1	Years, 1-70.	Is Ten Traes, 1869-79.		
			i	Increase.	Dec'se.	Increase.	Dec'se.	
Barnstable,	35,990	84,610	32,744	_	1,866	_	8,946	
Berkshire,	55,120	56,944	64,827	7,883	<b>'-</b>	9,707	· -	
Bristol,	93,794	89,395	102,886	18,491	-	9,092	-	
Dukes,	4,403	4,200	8,787	-	413	- 1	616	
Essex,	165,611	171,084	200,843	29,809	- 1	85,282	-	
Franklin,	81,484	81,840	82,635	1,295	-	1,201	-	
Hampden,	57,366	64,570	78,409	18,889	-	21,043	-	
Hampshire,	37,823	89,269	44,388	5,119		6,565	-	
Middlesex,	216 854	220,384	274,853	53,969		57,999	-	
Nantucket,	6,094	4,748	- 4,128		625	- 1	1,971	
Norfolk,	109,950	116,306	89,443	-	26,868*	1 - 1	20,507	
Plymouth,	64,768	63,107	65,865	2,258	-	597	-	
Suffolk,	192,700	208,212	270,802	62,590	-	78,102*	-	
Worcester,	159,659	162,912	192,716	29,804	-	83,057	-	
Totals,	1,231,066	1,267,081	1,457,351	190,320	_	226,285	_	

<sup>\*</sup> Roxbury and Dorchester annexed to Boston.

It will be seen that the large increase of population has taken place in the counties previously populous—in the centres of manufacturing industry, and of commerce. Barnstable, and Dukes and Nantucket have declined in a marked degree; the agricultural county of Franklin but little more than holds its own, and Hamp-

shire shows but a moderate gain. Both Plymouth and Franklin lost population during the five years of war, but are new recovering. On the other hand, Suffolk, Worcester, Middlesex, Hampden and Essex have greatly prospered, and Berkshire, an agricultural county with a good many factories, has also made a marked advance.

Looking at the population of the towns it appears that every town in Barnstable, Dukes and Nantucket Counties, except Provincetown, has lost population, and many of them very largely.

In Berkshire the principal gains have been in Adams, Pittsfield, West Stockbridge, Williamstown and Lenox.

In Bristol County the gain has been almost entirely in Fall River and Taunton, the former city having increased from 17,481 in 1865 to 26,766 in 1870.

In Essex County the most marked increase may be found in Lawrence, Lynn, Gloucester, Haverhill, Salem and Amesbury. Many towns in this county are nearly stationary, and a few have slightly declined.

In Hampden County the purely agricultural towns, like those of Franklin and Hampshire Counties, show a small but pretty steady decline, while the factory towns of Chicopee and Holyoke have increased greatly. Holyoke has nearly doubled its population in the past five years.

In Hampshire the towns of Northampton, Ware, Easthampton and Amherst have notably increased.

In Middlesex County the greatest gains have been in Cambridge, Lowell, Newton, Somerville and Waltham, but many smaller manufacturing towns have prospered, and only eight small farming towns have failed to hold their own.

Norfolk County has gained in the towns occupied largely by persons engaged in business in Boston.

In Plymouth County North Bridgewater is the only town which shows a marked increase.

Suffolk County has absorbed Roxbury and Dorchester, but has also gained in Boston proper, and in Chelsea.

Worcester County shows a small but pretty uniform decline in the population of its farming towns, but an equally steady and frequently large gain in its smaller factory towns, and a large gain in Worcester and Fitchburg. Age and Sex of the Population of Massachusetts.—The information concerning these two interesting points is taken from manuscript reports received from the Census Bureau at Washington to which have been added such portions of the census of the State during the past forty years as would make the whole subject more intelligible.

Population of Massachusetts arranged by Age and Sex.— U. S. Census, 1870.

	Total of all	OME YEAR.								
AGES, .	Ages.	Under 1	1 to 2	# to 8	8 to 4	4 to 5				
Sex, { M., F.,	703,779 758,572	16,566 16,421	15,138 14,888	16,370 15,963	15,984 16,053	14,981 14,52 <b>5</b>				

	Five '	YBARS.	THREE YES	Two Yrs.	One Year.	FOUR YES.	Frys Yss.
AGES, .	5 to 10	10 to 15	15 to 18	15 to 20	20 to 21	<b>31</b> to <b>35</b>	25 to 30
Sex, { M., F.,	69,854 69,942	74,270 74,101	40,516 43,137	27,849 <b>8</b> 0,682	14,078 18,098	52,203 60,195	60,784 69,501

				FIVE YEARS.			
AGES, .	<b>80</b> to <b>85</b>	85 to 40	40 to 45	45 to 50	50 to 55	55 to 60	<b>60</b> to <b>65</b>
Sex, { M., F.,	52,667 59,175	48,497 53,812	42,689 46,164	87,417 86,419	32,131 31,861	21,833 22,523	19,667 21,274

		FIVE YEARS		Tan	YBARS.	100 and	
AGES	65 to 70	79 to 75	75 to 80	80 to 90	90 to 100	OWAY	Unknown.
Sex, { M., F.,	12,760 14,700	9,024 11,360	4,821 6,690	8,410 5,481	284 556	20 26	16 25

# POPULATION of Massachusetts.—Ages.

Ages of Population, 1830-1870.—The following table, covering a period of 40 years, shows the Ages of the Population, according to the Censuses of 1830, 1840, 1850, 1855, 1860, 1865 and 1870, together with the Percentage of the Number at each Age to the total Population:-

Ages of Population at Seven Censuses, 1830–1870, and Percentage of the same.

													l			
YEABS.		<b>3</b> төба∪	<b>61</b> 04 2	ar ot er	<b>08</b> of <b>21</b>	<b>68</b> ot <b>68</b>	07 01 08	<b>6</b> 9 01 <b>6</b> 7	60 to 62	<b>●L</b> 04 <b>0●</b>	<b>66</b> 04 <b>6</b> £	<b>66</b> of <b>68</b>	001 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	001 100	Age unk.	Aggregate.
Population at acceded Course.	1830, 1840, 1850, 1855, 1865, 1865, 1870,	80,177 92,625 112,997 132,944 151,289 133,943 156,889	70,525 80,411 101,845 116,863 128,526 143,391 139,796	68,005 74,803 97,168 1110,098 114,348 126,691 148,371	67,240 77,429 104,912 117,047 120,800 117,171 143,184	119,116 150,535 209,163 235 678 244, ·19 225, bu6 274,859	78,596 101,607 142,542 165,046 183,705 186,543 214,151	60,367 63,270 95,308 111,500 125,470 142,831 162,689	83,464 41,954 56,633 71,829 81,453 86,446 108,348	23,308 26,017 86,550 42,423 49,873 59,216 68,401	13,748 14,860 17,787 20,810 26,675 81,895	4,288 6,1869 7,563 8,891 8,891	520 570 580 715 798	**************************************	1,188 2,841 1,802 41	610,408 737,700 984,514 1,132,869 1,231,066 1,267,031 1,467,351
Percentage of Population at each Age.	1830, 1840, 1850, 1856, 1856, 1865, 1865,	18-29 19-71 11-46 11-74 18-28 10-57	111-69 111-03 110-34 110-83 111-33 9-60	111-27 10 26 9-86 9-72 9-28 10-00 10-18	11.15 10.62 10.63 10.34 9 81 9 77	19-74 20-64 21 23 20 81 19-82 17-80 18-80	12 26 13 93 14 46 14 58 14 91 14 64 14 64	8.35 8.68 8.67 9.67 10.19 11.27	6.55 6.05 6.34 7.61 7.44	8-86 8-58 8-71 8-75 4-05 4-70	28 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 2 1 1 2	£2333333	<b>\$</b> \$\$\$\$\$\$\$	111111	1 1246554	100-00 100-00 100-00 100-00 100-00 100-00

NUMBER OF PERSONS in Massachusetts over 80 years of age. — Census, U. S., 1870.

404	AGE8,	3	2	8	2	1	29	2	\$	:	9	2	5		8	3	2
Total,	Total, { Males,	846		466 682	872 667	874 671	276 478	235	167 297	123 287	94 186	88	87	<b>\$</b> 2	25.23	<b>∞</b> €	∞ %
Native, .	Native, . { White Males, .	. 607 943	426 646	415	828 608	828 523	227 396	205 292	141 270	110	18 8	143	88	48	27	36	23. cz
Foreign,	Foreign, { White Males, .			48	4	45	45	88	25.22	213	22	28	~ ~	5 8	10 eo	-4	တေ ထ
Colored (	Colored or Indian, * . { Females, .			Ø1 00	80	ဗေဆ	402	470	C) C)		101	61 65	1-		1 63	1,1	1 =

. Of these, only three males and one female are Indian. The oldest a male of 99.

<b>▲</b> 658,	96	2	96	8	100	101	10.8	108	104	105 106 107 108 109	106	2	8		Total for State. 80 or over 80 years.
Total, . { Males,	10 25	15	6 15	80	12	ън.	410	40	100	14	п.	1	1	1-1	8,664 6,063
Native, . { White Males,	21	77	4 ∞	- 9	ㅋㅋ	H 1	1 00	63 1	1	1 1	11	1 1	1 =	1 1	3,044 5,189
Foreign, White Males,	44		8180		~100	4-	æ <b>⊣</b>	87	1 =	١,	- 1		1 1	1 1	583 853
Colored or Indian, . { Females, .	- 1	ieo	1-	1	87	1 1		1-	1 1	1 1	1 1	1 1	1 1	1	37 7.1

AGED PERSONS living in Massachusetts in 1870.

Showing the number who have reached or passed the age of eighty in each county, distinguished as of American or Foreign birth, and the percentage of such persons to the whole number of persons in each county.

COUN	TIE	3.		Population.	American.	Foreign.	Total.	Percenta
Barnstable,				82,774	· 848	8	851	1-07
Berkshire, .	•	•		64,827	406	54	460	0.71
Bristol, .		•		102,886	787	92	829	0-80
Dukes, .		•		<b>8,</b> 78 <b>7</b>	56	1	57	1.50
Essex,	•	•		200,843	1,183	183	1,366	0-68
Franklin, .		•	•	82,635	384	8	887	1.19
Hampden, .	•			78,409	400	76	476	0-61
Hampshire,	•	•		44,388	852	82	884	0-86
Middlesex,	•	•	•	274,858	1,299	284	1,583	0-58
Nantucket, .	•	•	•	4,128	90	6	96	2.83
Norfolk, .	•	•	٠.	89,448	578	85	663	0.74
Plymouth, .	•	•		65,365	660	46	706	1-08
Suffolk, .			•	270,802	583	374	957	0.85
Worcester, .	•		•	192,716	1,210	203	1,413	0.78
Totals,		•		1,457,351	8,281	1,447	9,728	0-67

In looking at the preceding tables it is plainly seen that Massachusetts is prospering. We have gained more than 15 per cent. in five years. If this rate of growth is continued we shall have, before the year 1900, more than three millions of people in our territory, and Massachusetts will then be a more densely populated country than England now is. Evidently this is far beyond the natural increase of any settled community, and is due to the excess of immigration over emigration, fostered by our manufactures all over the State, and by the commercial activity of the city of Bos-

ton. Our farming towns are stationary. They have hardly more inhabitants than fifty years ago, and, of those who remain, the proportion of persons past middle life is probably now much greater than then. The young of both sexes crowd into the busy towns to seek their fortune, or go to more distant fields of labor, where their intelligence and skill may find a better harvest than among the cornfields of the old homestead.

While the farms are thus losing the young people, who go in all directions in and out of the State, there is a steady influx of foreigners to work in our mills and shoe-shops, and indeed, to perform a very great part of the manual labor in every department, not only of manufacturing industry, but of commerce and of agriculture.

Each generation seems to find this tendency of our people more marked. The American, born of Massachusetts stock, and educated in our common schools, if he does not despise the labor of the hands, at any rate finds the use of his mental faculties more profitable. He is unwilling to work on the farm, he is disinclined to the mechanical trades, and he seeks employment (like the Jews, all over the world) in some department of trade, or else in directing the labor of others. The hard work of the hands is chiefly done by strangers: by Irish and Germans and people from the English provinces, brought up under different influences. It is no part of our duty to speculate or moralize about this state of things, but it is important that the fact should be recognized in the interpretation of these tables.

Labor is in demand. Unskilled labor is relatively highly paid, and it attracts to our busy manufacturing towns and villages, and to the domestic service of our families, a host of laborers from other countries.

There are thus two active streams of movement among the people, the one leading from our rural townships to every field of commerce and industry in this and other States where money can be made by superior intelligence; the other, a still stronger current, bringing from foreign parts the busy hands which make our State a hive of industry.

Both are made up of the productive classes, and both leave a large proportion of the unproductive classes behind them. We may thus see a reason for the changes which have taken place in the distribution of ages among the people during the past forty

years. We were a comparatively stationary population in 1830. We are now migratory, but the influx far exceeds the efflux, and is working great changes in the character of our people.

We would call attention in the forty years' table above referred to, to the evidence which it affords of the influence of the civil war upon the birth of children. In the column representing the ages 5 to 10 in the years 1865 and 1870, the proportion suddenly drops from 11.32 to 9.60. While from 10 to 15 it remains about the same. The smaller proportion of children under 5 in both these years is probably also due to the loss of so many adult men between 1861 and 1865.

NEW Towns, Changes of Names, &c.

The last notice in these reports of the incorporation or change of names of cities or towns in the Commonwealth, was in the report of 1867. The following additional changes have since occurred:—

- 1867. Roxbury was annexed to Boston in 1867.
- 1868. The town of HYDE PARK was incorporated April 22, 1868, from portions of Dorchester, Milton and Dedham. In the same year the name of South Danvers was by legislative enactment changed to Peabody, and that of South Reading to Wakefield.
  - 1869. Dorchester was annexed to Boston in 1869.
- 1870. The town of Norfolk was incorporated February 23, 1870, from portions of Wrentham, Franklin, Medway and Walpole. The town of Everett was incorporated March 9, 1870, from Malden. The town of GAY HEAD was incorporated April 30, 1870, embracing the former district of Gay Head. The town of Mashpee was incorporated May 18, 1870, embracing the former district of Marshpee.
- 1871. The town of AYER was incorporated February 14, 1871, from portions of Groton and Shirley. The town of MAYNARD was incorporated April 19, 1871, embracing portions of Stow and Sudbury. The name of North Chelsea was changed to Revere, March 24, 1871.

...**...** 

BIRTHS.

The following table shows the number of births registered in the State during the past nineteen years:—

	YE	AR.	•	Born alive.	Stillborn.	YE.	AR.		Born alive.	Stillborn.
1852,	•	•		29,802	598	1862, .	•	•	32,275	907
1858,				30,920	568	1863, .			80,814	908
1854,				31,997	<b>5</b> 58	1864, .			30,449	856
1855,		•		82,845	725	1865, .			80,249	859
1856,				84,445	695	1866, .			84,085	1,046
1857,		•	•	85,820	789	1867, .			35,062	1,007
1858,		•		84,491	747	1868, .			36,193	1,050
1859,				85,422	733	1869, .			86,141	1,094
1860,				86,051	1,062	1870, .	•		88,259	1,019
1861,				85,445	1,017					

The Birth-rate for 1870 is 2.62 for every one hundred persons, or 26 2 for every one thousand. Including the stillborn, a child was born to every 37 persons.

The whole number of births (stillborn included), is 39,278, or 2,043 more than in 1869. It is probable that this number is considerably less than the actual number of births in the State, the registration of births according to the existing regulations being exposed to obvious deficiencies.

The very marked diminution in the Birth-rate which occurred in 1862, and which, in consequence of the absence of male adults in the national service and the death of great numbers, continued during the four years of war (1862-5) has not yet been recovered

from, although there is a steady but very gradual approach to the relatively high rates which were maintained before 1861.

LIVING BIRTHS, and numbers living to one Birth in the different Counties in 1870.

COU	NTI	ES.			Population—1970.	Living Births.	Numbers living to one Birth.
Barnstable, .			•	•	32,774	669	48-94
Berkshire, .			•		64,827	1,616	40-12
Bristol,				•	102,886	2,682	88-36
Dukes and Nan	tuck	et,	•	•	7,910	99	79-89
Essex, .					200,843	4,772	42.08
Franklin, .					82,635	644	50-67
Hampden, .		•	•		78,409	1,969	89-82
Hampshire, .		•	•		44,388	1,019	43.56
Middlesex, .		•			274,353	7,444	86-86
Norfolk, .				•	89,443	2,256	89-65
Plymouth, .				•	65,365	1,463	44.68
Suffolk, .			•	•'	270,802	8,614	81.44
Worcester, .			•		192,716	5,012	88-45
Whole Sta	ite,			•	1,457,851	38,259	38-09

By this it appears that Suffolk, Middlesex and Bristol are the three most prolific counties, while Dukes and Nantucket, Franklin and Barnstable, are at the foot of the list.

BIRTHS in Massachusetts. — Quarterly Rates.

r	ERIOD.				Numbers.	Percentage.
Quarter ending with	March, .	•			8,871	2.43
	June, .	•			9,195	2.52
	September,		•		10,055	2.76
	December,	•			10,888	2.83
Whole year,			••	.	88,259	2.62

The above table shows the Birth-rate for each quarter, supposing it to have been maintained for the entire year.

BIRTHS arranged in periods of Six Months.—Ten Years.

		YBA	.R8.				Two First Quar- ters.	Two Last Quar- tern.	Difference.
1861, .	•						16,644	18,756	2,112
1862, .	•		•	•	•		15,308	16,938	1,680
1863 .	•		•	•		•	14,388	15,952	1,614
1864,.	•	•	•		•		14,052	16,366	2,314
1865,.	•				•		14,186	16,113	1,977
1866, .		•	•	•			15,218	18,867	8,649
1867, .	•	•	•	•			15,971	19,091	8,120
1868, .	•	•		•	•		16,728	19,465	2,787
1869, .	•	•			•		16,238	19,903	8,665
1870, .		•	•	•	•		18,066	20,393	2,327
Aver	age,		•	•	•	•	15,670	18,184	2,514

The disparity between the two semi-annual periods as regards the number of births, is somewhat less in 1870 than has been apparent in previous years. The same causes which were alluded to in former reports, the enforced separation of husbands from their wives at certain seasons of the year in order that the occupations of seamen, of fishermen, of laborers, &c., may be pursued, are still operative.

Proportion of the SEXES .- Nineteen Years.

	•					1870.	1853-1869.
	Males, .		• .			19,808	808,185
Born alive,	. { Females,					18,484	291,276
	Not stated,					22 -	2,057
Males to 100	females, .		•			107.4	105-8
	Males, .					578	8,232
Stillborn, .	$\cdot \left\{ \text{ Females,} \right.$		•		.	889	5,615
•	Not stated,				.	57	2,284
Males to 100	females, .		•			147.3	146-6
	Males, .					181	1,783
Illegitimate,	. Females,	•		•	.	15 <del>4</del>	1,854
-	Not stated,		•	•	.	_	34
Males to 100	females, .					85-	96-2

The preponderance of male births in a certain fixed proportion, varying but little from year to year, and in groups of years practically constant, is a fact to be recognized and not to be explained. The seemingly fortuitous occurrence of a male or female birth is seen to be strictly in accordance with nature's great plan.

But if the immediate causes of this disparity are concealed from human eyes, the uses are plain. The excess of males provides for the casualties of war and exposure. Should women take their share of these risks the male sex would preponderate, and nature's plan would be reversed. We may be therefore quite sure that they never will.

BIETHS by Counties in 1870.—Proportion of Males to Females.

	20 U 1	TIE	8.			Males, per cent.	Pemales, per cent.	Males to 100 Females.
Barnstable,		•			•	50.5	49.5	102-1
Berkshire,	•	•		•		52.7	47.8	111-4
Bristol, .			•			42.	48-	108-7
Dukes and	Nantu	icket,		•		45.5	<b>54</b> ·5	83-3
Essex, .		•			•	50.9	49-1	104-4
Franklin,	•					49-4	50-6	98-4
Hampden,	•					52.8	47-7	109-7
Hampshire,						58-1	46-9	113-2
Middlesex,	•					52-2	47.8	109-1
Norfolk, .				•		50-8	49-2	103-2
Plymouth,	•			•		53-9	46-1	116-7
Buffolk, .						51.6	<b>48·4</b>	106-5
Worcester,				•		51.7	48-3	107-4
Whole	State	, .			•	51.8	48.2	107-4

Exhibit of the Parentage of the Children born alive, in several classes, which were Registered in the several Counties of Massachusetts during the vear 1870.

					(A)	of massaciastics and my me year 1010.	acette cer	Sun III	we ye	7	•						
				#IAT8	Barmstable.	Berkehire.	Bristol	Dakes & Nan- tucket.	Essex.	Frankiln.	Hampden.	.evideqmaH	Middlesex.	Nortolk	Plymouth.	Buffolk.	Woroester.
	Totals,	•		. 38,259	689	1,616	2,682	66	4,772	644	1,969	1,019	7,444	2,256	1,463	8,614	5,012
	Males,	•	•	. 19,803	338	851	1,395	45	2,433	818	1,030	541	3,884	1,145	788	4,442	2,592
Aggregates,	Females,	•	•	. 18,434	331	764	1,284	72	2,330	824	939	478	3,560	1,109	675	4,172	2,414
	Unknown,	.,	•	ୟ 	1	-	က	1	6	-	1	ı	١	63	ı	•	•
A	PARENTAGE.									-							
American, .		•	•	15,568	510	709	1,210	81	2,333	421	834	208	2,737	945	088	2,324	1,961
Foreign, .	•	•	•	18,339	96	723	1,230	10	1,924	183	962	438	8,838	1,030	386	4,925	2,619
American Father and Foreign Mother,	ner and For	eign	Mother,	1,787	53	61	100	70	245	12	<b>8</b>	89	355	123	46	518	174
Foreign Father and American Mother,	r and Amer	rican	Mother,	2,256	83	106	126	7	251	প্ল	75	40	478	150	42	700	231
Not stated,		•	•	314	<b>H</b>	17	16	-	18	8	12	1	41	00	19	147	27
				-			-			-							

PLURALITY CASES (included above).

			i				-	COOR SORVEY CHOW TITESTOF										
	Aggregates,	ates,		•	697	18	19	84	ı	88	15	88	20	180	8	88	136	8
Totals, .	.   Males,	•	•	•	385	11	16	98	. 1	暮	9	- 50 -	14	82	28	21	76	32
	Females,	•	•	•	332	4	35	81	ı	64	10	18	9	72	16	11	8	22
,	(Males, .	•	•	•	163	11	2	2	ı	82	80	•	۵	ដ	83	14	11	6
· · · · · · · · · · · · · · · · · · ·	Females,	•	•	•	149	7	17	က	ı	58	က	13	80	31	10	14	19	4
	( Males,	•	•	•	181	ı	6	15	ı	15	7	10	rÖ	39	8	2	49	25
· oreign,	Females,	•	•	•	152	1	18	17	1	18	61	9	ဧာ	88	17	85	23	G
Am. Father,	(Males,	•	•	•	14	ı	ı	Q	. 1	ŀ	ı	63	ı	81	Ø	1	70	-
For. Mother,	Females,	•	•	•	14	ı	ı	ı	i	64	1	ı	i	<b>C4</b>	ı	1	ಣ	2
For. Father,	(Males,	•	•	•	17	ı	ı	61	1	တ	١,	63	1	٠.	1	ı	<b>1</b> 0	ı
Am. Mother, Females,	Females,	•	•	•	17	ı	ı	Ø	i	<b>65</b>	1	ı	ı	٦	ı	1	60	61
				1	=	-		-	-	-	-	-	1	-	-			

Eahibit of the Parentage of the Children born alive—Concluded.

ILLEGITIMATE BIRTHS (included above).

Worcester.	18	a	1	80	īĊ.	ಣ	63	ı	ı
Saffolk.	70	82	4	~	15	10	18	12	00
Plymouth.	35	15	20	8	13	9	2	ı	ı
Morfolk.	12	89	œ.	61	6	-	œ	i	ı
Middlesex.	29	88	24	17	6	16	18	1	)
.eridegmaH	ю	81	တ	61	-	1	<b>CN</b>	ı	(
.nebqank	83	13	<b>a</b>	80	60	rÖ	<b>6</b>	ı	1
Franklin.	çı	61	1	-	1	1	1	1	1
Essex.	34	11	23	œ	11		\$	ı	١.
Dukes & Nan- tucket.	ю	ı	10	1	ю	ı	ı	ı	. '
Bristol.	22	91	ro	4	∞	<b>63</b>	C1	1	1
Berkshire.	12	*	<b>∞</b>	89	•	H	<b>C7</b>	1	ı
Barnstable.	1	ı	1	ı	ı	ı	ı	ı	1
ATATA	285	131	154	11	88	84	63	12	<b>∞</b>
	•	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•	•
		•	•	•		•		•	•
	Totals,	Males,	Females,	(Males,	Females,	(Males,	Females,	Males	Females,
		·							. •
		Aggregates,			American,		r oreign,		rot stated,

Percentage of	American	and	Foreign.	LIVING	Births	in	each of
	the	past	Seven Y	ears.			

	•			1864.	1865.	1866.	1867.	1866.	1869.	1670.
American,	•		•	44.91	44.53	44-42	42.36	43.05	42-07	41.01
Foreign, .				47-62	47.40	47:30	48.75	47-60	48-01	48· <b>33</b>
One parent F	'oreig	gn,	•	2.47	8.07	8-28	8-89	9.85	9.92	10-66

The above table shows that the proportion of Foreign births has remained quite constant since 1864; the purely American births have steadily diminished their ratio; and the births from mixed parentage have as steadily advanced.

The following table presents a more extended comparison in point of time:—

Percentages of American and Foreign LIVING BIRTHS in the past Twenty-Two Years.

			Average. 1849-58.	Average. 1854-58.	Average. 1859-68.	Average. 1864-68.	Average. 1869-70.
American,			68-02	50-38	46-06	43.85	41.54
Foreign, .			85-96	44-12	46-89	47:73	48-17
One parent	Fore	ign,	1.02	5-50	7.05	8.42	10-29

The excess of foreign over native parentage is considerably greater than in any year since 1865; it is 2,776, or 647 more than the excess reported the previous year, and 1,038 more than the average for the previous four years. Foreign births are in the majority in Suffolk, Middlesex, Worcester, Hampden, Norfolk, Bristol and Berkshire.

Comparing 1870 with 1869, we find that the American births have diminished by 463; the Foreign births have increased by 1,110; and the mixed (one parent foreign) have increased by 485.

This evidence is confirmatory of our general remarks concerning the census of 1870. The character of our population is undergoing a great change. Surely, and not very slowly, a mixed stock of Irish, Germans and Canadians is taking the place of the purely English stock which has possessed Massachusetts for more than two centuries. The tide of immigration flows the stronger with our increasing wealth and general prosperity. There is much hard work to be done, unskilled labor is in demand, and Americans are not ready or willing to supply it from their own ranks. Here are facts for the statesman, the educator and the moralist.

Plural Births.—Three hundred and forty-seven women in Massachusetts gave birth in 1870 to 697 children. Three hundred and forty-four had twins and three had triplets. The proportion of women in labor who give birth to more than one child is each year nearly the same,—one in every hundred. The number of cases of triplets is three less than in the previous year.

Regitimates.—The number reported is 285, one less than in 1869. There are 131 males and 154 females. As has been a general rule, the latter (females) predominate, although for what reason we are at a loss to imagine.

Stillborn.—The number reported was 1,019, 75 less than in 1869.

#### MARRIAGES.

The whole number of marriages reported for 1870 was 14,721, a decrease of 105 as compared with 1869.

#### MARRIAGES registered in Massachusetts, 1864-70.

	1964.	1965.	1966.	1867.	1968.	1869.	1870.
Marriages,	12,518	18,052	14,428	14,451	13,856	14,826	14,721
Persons married, .	25,026	26,104	28,856	28,902	27,712	29,652	29,442

One person in every 49.49 of the people was married in 1870.

# MARRIAGES in Massachusetts.—Quarterly Aggregates and Percentages.

	FIV	7 E Y	E A R	8.	lst Quarter.	2d Quarter.	3d Quarter.	4th Quarter.
1866,					3,057	8,751	3,151	4,441
1867,					8,252	3,658	3,137	4,404
1868,					8,085	8,395	3,004	4,372
1869,					3,007	3,854	3,401	4,564
1870,					8,277	3,625	3,259	4,560

#### PERCENTAGES.

1866, 1867, 1868, 1869, 1870,		:	:		21·28 22·50 22·27 20·28 22·26	26·05 25·81 24·50 25·99 24·62	21·88 21·71 21·67 22·94 22·14	30·84 . 30·48 31·56 30·79 30·98
---	--	---	---	--	---	---	---	---

Marriages are most numerous in the autumn; next, the spring months; then winter and summer.

MARRIAGES in Massachusetts.—Rates by Counties.

			1			!		MARRIAG	Marriages to 166 Living.	LIVING.			PERSONS L	PERSONS LIVING TO 1 MARRIAGE.	MARRIAGE.	
	000	z	7 H				1866.	1967.	1669.	1868.	1870.	1866.	1867.	1868.	1869.	1870.
Description		! 					1.090	000	000	0.00	600.0	8	3	:	114	110
Dariistanie,		•	•	•	•		000.	070.T	080.5	000	000	R	2	111	#11	011
Berkshire,	•				•	•	1.001	1.106	0.969	0.895	0-807	88	8	103	112	123
Bristol, .			•		•	•	1.085	1.087	1.050	1.129	0.891	95	85	92	8	112
Dukes, .	•				•	•	1.048	0.571	069-0	069-0	0-845	92	175	145	145	118
Essex,		•	•			•	1.206	1.205	1.125	1.202	1.038	88	88	68	88	96
Franklin,	•			•		•	0.960	0-903	606-0	1.069	0.708	104	111	110	83	141
Hampden,						•	1.256	1.313	1.206	1.274	1.080	43	92	88	78	93
Hampshire,		•	•		•	-	1.176	1.184	1.103	1.062	0.978	85	84	16	94	102
Middlesex,	•		•			•	1.045	1.125	1.077	1.199	0-989	96	88	88	83	101
Nantucket,	•			•		•	1.095	0.842	0.611	0.989	0.778	91	118	164	101	129
Norfolk,			•			•	0.788	262-0	0.805	269-0	0.780	127	125	124	144	128
Plymouch,		•			•	•	996.0	0-893	0.805	926-0	0.818	103	112	124	102	122
Suffolk,			•	•		•	1.453	1.436	1.359	1.674	1.305	88	89	74	28	11
Worcester,	•		•	•	•	•	1.143	1.112	1.086	1.066	0.062	87	8	85	94	104
Whole State,	State	•	•	•		•	1.139	1-141	1.094	1.170	1.010	88	88	18	33	8
						$\dashv$										

It will be observed that, as a rule, those counties show the highest rates which contain the cities of the State.

Acts at Marriage of 14,670 Men and of 14,654 Women.

	•		ľ											
о М	D& radar	58 ot 08	08 oj 38	28 ot 08	97 of 98	27 of 67	●3 cd 23.	23 ot 02	00 ot 23	<b>39</b> ot <b>69</b>	02 to 40	2L 01 OL	<b>68</b> 01 TL	<b>98</b> 3370
Men, Women,	326 2,024	5,625 6,494	4,528	1,872	915 581	469 801	326 160	285 73	155	121	14	25.0	85 cs	41
•		AGE	Ages at Marriage of 12,330 Bachelors and 13,065 Maids.	rriage oj	f 12,83	0 Васн	ELOBS a	nd 18,0	65 MA	DS.				
Bachelors,	325 2,906	6,852	4,214 2,645	1,458	494	148	70	22 18	10	<b>∞</b> 4	<b>ତ</b> ବା	1 1	<del></del> 1	1 1
		Ади	Ages at Marriage of 2,310 Widowers and 1,560 Widows.	rriage o	f 2,310	WIDO	YEBS an	d 1,560	WIDO!	¥8.				
Widowers,	14.	49	303 336	408 828	419 294	320 191	255 118	210 57	139	115 25	11	25	12	₹ 1

28.8 years.	24.9 "	26.8 "	23·6 "
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•			•
•	•	•	
•	•	•	
•	•	•	•
•	•	•	
The average age of all the men married in 1870, was	average age of all the women married in 1870, was	average age of men marrying for the first time, was	average age of women marrying for the first time, was

These ages correspond to a year, and even to a month, with those of persons marrying in 1869.

Social or Conjugal Condition of Persons Married in Massachusetts, 1870.

MALES.	Whole No.			EMALE	8.	
Number of the Marriage.	of Marriages.	First Marriage.	Secon.i Marriage.	Third Marriage.	Fourth Marriage.	Un <b>known</b> .
Whole Number,	14,721	13,111	1,504	61	8	42
1st Marriage, .	12,362	11,666	679	16	1	-
2d Marriage, .	2,079	1,321	728	30	-	-
8d Marriage, .	208	114	82	11	1	-
4th Marriage, .	29	10	14	4	1	-
5th Marriage, .	1	-	1	_	] _	-
Unknown, .	42	_	_	_	l <b>-</b>	42

The percentages of first and subsequent marriages during the past eight years were as follows:—

		First Marriage.	Second Marriage	Third Marriage.	Fourth Marriage.	Fifth Marriage.	Sixth Marriage.	Not stated.
1868,	Males, . Females, .	81·89 88·05	16-06 10-80	1·21 ·88	·12 ·04		1 1	·73
1864,	Males, . Females, .	81·78 87 26	15·71 11·50	1·78 ·60	·12 ·05	-02 -	- -	·59 .59
1865,	Males, . Females, .	81·10 86·14	16·87 12·70	1·76 ·52	·14 ·02	-01 -	-	-62 -62
1866,	{ Males, . } Females, .	82·24 87·38	15·80 11·66	1:31 :36	•08 •01	•01 -	_	·56 ·59
1867,	{ Males, . } Females, .	83·25 87·51	15·04 11·57	•95 •30	•18. •04	·01 ·01	-	·57 · 57
1868,	{ Males, . } Females, .	83·63 87·95	14·62 11·54	1·41 ·29	·12 ·02	-	-01 -	·20 ·20
1869,	{ Males, Females, .	83·81 88·70	14·38 10·57	1·42 •47	·15 ·03	-01 -01	-02 -	·20 ·20
1870,	{ Males, Females, .	83·97 89·06	14·12 10·22	1·41 ·41	·19 .02	·01 -	-	·29 ·29

# Certain Marriages.—1870.

						AGE	8 0	FFE	MAI	LES.			
AGES OF 1	CALES.	TOTALS.	14	15	16	17	18	19	22	24	26	28	85
Totals,	• •	675	6	83	181	852	57	40	2	1	1	1	1
15,		1	-	_	-	_	1	_	-	_	-	-	_
16, .		1	-	-	-	-	1	-	-	-	-	-	-
17, .		10	-	-	1	5	1	2	-	-	1	-	-
18, .		58	-	5	9	8	22	7	-	1	-	-	1
19, .		118	-	5	13	84	82	31	2	-	-	1	-
20, .		66	3	2	22	89	-	-	-	-	-	-	-
21, .		81	-	5	25	51	-	-	-	-	-	-	-
22, .		87	1	4	26	56	-	-	-	-	-	-	-
23, .		66	-	2	18	46	-	-	-	-	-	-	-
24, .		66	1	2	27	36	_	-	-	-	-	-	-
25, .		40	-	8	12	25	_	_	-	-	-	_	-
26, .		22	-	-	11	11	-	-	-	-	-	_	_
27, .		17	-	-	5	12	-	-	-	_	-	-	-
28, .		9	-	1	2	6	-	-	-	-	-	_	_
29, .		9	-	1	2	6	-	_	_	-	-	-	_
^^		6	-	-	2	4	-	_	_	-	-	-	-
31, .		6	-	-	1	5	_	-	-	_	_	-	_
<b>32</b> , .		4	1	1	2	-	_	-	-	_	_	_	_
88, .		1	-	-	-	1	-	_	-	-	-	-	-
34, .		2	-	-	1	1	-	-	_	-	_	-	<u>'</u>
<b>36</b> , .		8	-	2	-	1	-	-	_	-	_	-	-
87, .		2	-	-	-	2	-	-	i -	-	i -	-	-
88, .		1	-	-	-	1	_	-	-	-	_	-	-
39, .		1	-	-	1	-	_	_	_	-	_	_	-
40, .		2	-	-	1	1	-	_	<b>*</b> –	-	-	-	-
42, .		1	-	-	-	1	-	-	-	-	-	-	-

# Marriages.

																							_	
nale.	*	Š	43	98 74	! 1	ı	•	1	•	ı	i	1	1	1	1	1	1	1	1	1	ı	1	•	1
4th Male.	Age	K	25	78	2 1	ı	1	1	1	ı	1	ı	1	1	ı	1	1	ı	1	1	1	1	1	ı
4th Male. 2d Female.	Age.	ş	8	84	8	8	41	45	40	43	45	40	සි	ı	ı	1	1	ı	1	1	ı	ı	ı	1
4th 2	₹	K	జ	202	8	42	26	99	48	88	46	22	25	1	1	1	1	1	1	1	  -	1	1	1
4th Male. let Female.	Ages.	F.	47	S 6	8	82	55	18	21	41	1	1	1	1	1	ı	1	1	1	1	1	1	1	1
4th J	¥	Ma.	42	57	8	23	88	36	41	2	1	1	1	1	1	1	1	1	1	1	1	ا 	1	1
ale. nale.	ž	ě	33	32	88	45	3	1	1	1	1	1	ı	ı	ı	ı	ı	1	1	i	1	1	1	ı
3d Male. 2d Female.	Ages.	Ka.	27	22	8 8	2	8	1	1	1	1	ı	ı	1	ı	ı	1	ı	ı	ı	1	ı	1	t
ale. nale.	4	Fe.	58	82	88	21	23	58	83	83	54	69	52	82	31	25	24	19	18	58	54	34	82	೩
3d Male. 1st Female.	Ages.	Kr	35	88	61	25	88	30	34	32	41	78	35	41	41	67	61	83	88	88	န္တ	88	န	47
ale. male.	ź	Je.	72	33	28	1	1	1	ı	1	1	ı	1	ı	1	1	1	1	ı	ı	ı	1	ī	1
2d Male. 3d Female.	Ages.	Kr	69	3.3	37	1	ı	1	ı	ı	1	1	1	1	ı	1	1	1	1	1	ı	1	1	1
Both.		ř	78	42.5	47	20	24	18	2	ı	ı	ı	1	ı	1	ı	ı	1	I	1	1	1	ı	1
Jo pg	Ages.	4	81	22	292	21	67	48	2	1	ı	ı	ı	1	1	ı	1	1	1	1	ı	1	1	ı
Male.	*	ş	23	11	47	16	23	16	22	16	41	16	8	17	16	49	16	18	22	91	18	ī	ı	ł
2d Male. 1st Femals	Ages.	Жa.	22	8 8	2	24	22	20	23	25	75	34	55	40	88	20	24	51	74	40	23	ī	ı	t
fale. male.	*	Je.	58	8 6 6 7	49	80	28	္တ	27	28	#	1	ı	1	1	ı	1	1	ı	ı	ı	ī	ı	ı
ist Male. 3d Female.	Ages.	Ks.	27	84	18	61	63	28	25	26	48	1	ı	1	1	1	ı	ı	1	ı	1	ı	١	ı
ale. male.	ź	Fe.	19	3 2 8 8	28	35	8	19	83	ន	63	18	စ္တ	21	21	19	21	22	20	18	ı	1	ı	1
lst M 2d For	Agr	Ka	22	82	17	18	62	30	8	18	65	8	19	23	21	19	83	21	23	24	ı	ı	ı	1
riage of arties.	şi.	Fe.	16	14	150	15	15	15	12	11	14	15	15	15	8	14	14	15	ణ	15	74	88	88	ı
First Marriage of both Parties.	Ages.	Na.	17	22	47	23	25	18	85	42	22	19	98	75	8	<b>%</b>	ನ	য়	67	2	28	22	61	ı

The two preceding tables show a portion of the marriages which occurred at ages when such contracts are seldom made, or where the disparity in this respect between the parties was remarkable. Aside from the merely transient interest which they may afford those who review them from curiosity, they have a certain scientific value. It will be seen that 352 females were married at 17, 181 at 16, 33 at 15 and 6 at 14 years of age. Some of the most remarkable marriages of the year were as follows: among the first marriages of both parties, was that of a man of 75 to a woman of 28, another of a man of 67 to a woman of 30, and two others where the parties were each 60 years of age. youngest couple were a boy of 17 and a girl of 16. A youth of 19 married a spinster of 28, and another married a widow of 80. A youth of 18 married a widow of the same age, and another married a widow of 35. A woman aged 25 married for the fourth time. A man aged fourscore years and six, found his "affinity" for the second time, in the person of a maiden of 37.

There were marriages of men at the ages of 81, 79, 76, 75 and 74.

A man aged 59, married for his third wife, a woman who had been three times married before.

A man aged 45 married a woman aged 26, both parties having been twice married before. Twenty-nine men married for the fourth time; the eldest at 83, married a widow of 48; the youngest at 36, married a maiden of 18.

A woman was married at the age of 78 to a man of 81. There occurred also the fifth marriage of a man of 54 to a widow of 42, and the fourth in each case of a man of 57 to a woman of the same age.

NATIVITY of Persons Married in the several Counties of the State.—Numbers. 1870.

					WROLE STATE.	.eldatema&	Berkehire.	Lotalra	Dayer	Essex.	Franklin.	Натробет	Hempshire.	Middlesex.	Nantucket	<b>Моно</b> Ш.	Plymouth.	Saffolk.	Wordester.
Marriages, .	•	•	•	•	. 14,721	283	523	917	32	2,086	231	847	437	437 2,714	32	869	535	8,535	1,854
American,	•	•	•	•	8,360	248	304	909	26	1,340	172	474		1,467	27	451	453	1,433	1,099
Foreign,	•	•	•	•	4,271	18	143	198	01	2 479		271		124 798	ı		83	1,462	532
American Groom and Foreign Bride,	and	Foreig	gn B	ride,	901	13	22	4	4	140	4			190	ı	9	Ħ	285	
Foreign Groom and		American Bride,	n B	ride,	1,174	4	51	67	1	123	8	83	28	258	73	55	13	355	141
Nativities not stated,	ed, .	•	•	•	15	ı	က	63	ı	4	ı	ı	01	п	t	-	1	1	61

## MARRIAGES according to Nativity .- Percentages.

	YE	ARS.	,		American.	Foreign.	Am. Groom and For. Bride.	For. Groom and Am. Bride.	Not stated
1862,	•		•	•	62-38	26.56	4.54	4-08	2.44
1863,		•	•		61 <b>·34</b>	27.85	4.44	5-14	1.28
1864,			•		60-53	28-32	4.52	6-08	∙55
1865,	•	•	•		59.58	29-29	4.49	6-16	-48
1866,	•		•		58-81	27.84	5.82	6.51	1.52
1867,			•		58-39	28.96	5-40	6.31	-94
1868,			•		58-10	29-08	5.41	6.94	-47
1869,					57.48	29.26	5-24	7.58	-44
1870,	•	•		•	56-79	29.01	6.12	7.98	•10

# NATIVITY OF PERSONS Married during Ten Years.—Numbers.

	1861.	1962.	1868.	1864.	1965.
	1901.	1908.	1968.	1964.	1965.
Whole number of Marriages,	10,972	11,014	10,873	12,518	13,051
American,	6,330	6,871	6,670	7,574	7,776
Foreign,	8,439	2,926	8,028	8,544	8,828
One party, Foreign,	1,036	950	1,042	1,832	1,390
Not stated,	167	267	183	168	62

# Percentages of those stated, equally dividing the Half Foreign.

Whole num	ber,	•	•		100-00	100-00	100.00	100-00	100-00
American,		•	•	٠	63-38	68-35	66-95	66-18	65-22
Foreign,	•	•	•	•	36-62	31.65	88-05	33.82	84.78

# Nativity of Persons Married-Concluded.

	180	6. 1967.	1966.	1569.	1970.
Whole number of Marriage	s, 14,4	128 14,451	13,856	14,826	14,721
American,	. 8,4	85 8,438	8,051	8,522	8,360
Foreign,	. 4,0	17 4,186	4,030	4,838	4,271
One party Foreign, .	. 1,7	06 1,692	1,711	1,900	2,075
Not stated,	. 2	20 135	64	66	15

#### Percentages—Concluded.

Whole number,	•	•		100.00	100-00	100.00	100-00	100.00
American, .	•	•		65-73	64.85	64-58	64·17	63-89
Foreign, .	•	•	•	84.27	85.15	85.42	85.88	36-11

#### DEATHS.

The whole number of deaths reported throughout the State during the year 1870, was 27,329. This number is greater than that recorded in 1869, by 1,275; and it is 2,336 more than the average annual number for the previous ten years (1860-69), including the years of the civil war, when a largely increased mortality was reported.

The death-rate for the State for the past six years is given in the following table:—

		T	EAR	3.			Population. Deaths to 100 living.		No. living to one death.
1865,	•	•	•	•	•	1	1,267,031	2.064	48
1866,		•					1,303,116	1.815	55
1867,		•					1,340,229	1.691	59
1868,		•					1,878,398	1.852	54
1869,		•		•	•		1,417,654	1.888	54
1870,							1,457,851	1.875	53

DEATH-BATE for Six Years.

# MORTALITY of Massachusetts in Six Geographical Divisions.— 1870.

DIVISIONS.	Population.	Deaths.	Deaths to 100 living.	No. living to one death.
1. Metropolitan (City of Boston,) including Roxbury and Dorchester),	250,526	6,098	2.43	41
2. North-Eastern (Essex and parts ) of Suffolk and Middlesex), }	465,116	8,492	1.83	55

# Mortality of Massachusetts—Concluded.

DIVISIONS.	Population.	Deaths.	Deaths to 100 living.	No. living to one death.
3. South-Eastern (Dukes and Nan-) tucket, Barnstable, Plymouth, Bristol and Norfolk), )	298,378	4,962	1.66	60.
4. Midland (Worcester and part ) of Middlesex),	223,072	3,968	1.78	56
5. Valley (Franklin, Hampshire ) and Hampden),	155,432	2,813	1.81	55
6. Western (Berkshire),	64,827	996	1.54	65

#### DEATH-RATE in the Counties.—1870.

COI	ע <b>א</b> ד	E 5.			Population—	Deaths to 100 living.	Persons living to one death.
Barnstable, .		•			82,774	1.45	69
Berkshire, .	•				64,827	1.54	65
Bristol, .		•			102,886	1.81	55
Dukes, .	•		٠.		3,787	1.85	54
Essex,	•		•		200,843	1.74	67
Franklin, .					82,635	1.69	59
Hampden, .				•	78,409	1.91	52
Hampshire, .,				•	44,388	1.71	58
Middlesex, .					274,353	1.89	53
Nantucket, .					4,123	2.25	44
Norfolk, .	•			•	89,443	1.56	64
Plymouth, .				•	65,865	1.62	62
Suffolk, .	•	•	•		270,802	2.37	42
Worcester, .					192,716	1.79	55
Whole St	ate,	• "		•	1,457,351	1.87	53

The order of mortality is as follows, beginning with the lowest: Barnstable, Berkshire, Norfolk, Plymouth, Franklin, Hampshire, Essex, Worcester, Bristol, Dukes, Middlesex, Hampden, Nantucket and Suffolk.

The preceding tables show the very marked difference in the death-rate between country and city. Yet it would be erroneous to suppose that this is all due to salubrious surroundings in the one case, and overcrowding in the other. These are very important influences and must have weight in any comparison, but they should not be considered alone. The two populations are not of equal age. There are more children in the cities than in the country in proportion to the whole number of inhabitants.

The birth-rate is high in Suffolk and the death-rate corresponds. In Barnstable and Berkshire and Franklin, both are low. More children are born to the poor, and a greater number die from neglect and exposure in the first years of life. Mere fecundity is not proof of prosperity either in the family or the nation. The proportion of children who are brought through the perils of infancy, and who reach maturity, is a better evidence of the existence of normal and healthful conditions. But this is hard to determine in Massachusetts, owing to the migratory and unsettled habits of our people.

In the tables which have led to these remarks, Dukes and Nantucket Counties have so small a population altogether, that their percentages for a single year prove nothing.

DEATH-DATE	in	the	Contros	Λf	Population.
DEATH-RATE	ш	ше	Centras	Οī	ropulation.

•			1965.	1870.		1865,	1870.
Holyoke, . Boston, . Gloucester, Lowell, . Worcester, Milford, . Charlestown,			2·14 2·36 2·45 1·86 2·49 2·41 2·03	2·72 2·48 2·32 2·32 2·18 2·11 2·09	Springfield, . Newburyport, Adams, . New Bedford, Somerville, . Lawrence, . Lynn, .	1·60 1·74 1·75 2·12 2·04 2·57 2·21	1·85 1·82 1·79 1·78 1·76 1·72 1·72
Fall River, Salem, . Cambridge, Taunton, . Fitchburg,	:	•	2·15 2·11 1·89 2·15 2·86	2·08 2·06 2·04 1·98 1·85	Chelsea, Northampton, Haverhill, Pittsfield, Newton,	2·08 2·46 1·63 1·56 1·39	1.68 1.59 1.56 1.55 1.01

The above table gives the death-rate in our largest cities and towns, for 1870, in their order, and also a comparison with 1865. Such statements are obviously of far greater value in these two years of the census than at any other time. Some of the towns, like Holyoke, have nearly doubled their population in the interval.

An improvement in the rate for 1870 is not to be fairly credited to the cities and towns in which it occurred, without also remembering that 1865 was a year of war, and that the rate for the whole State was then 2.06 per. cent. instead of 1.87 per cent. in 1870.

Seasons. DEATHS by Quarters of the Year.

						•		Deaths.	Percentage.
Deaths registe	red	in Q	uarte	rs end	ling v	vith—	-		
March,.	•	•		•			. •	6,071	22.2
June,								5,876	21.5
Septemb	er,							8,810	82.2
Decembe	r,	•			•	•	•	6,572	24·1

Sex.—The deaths of males exceeded those of females in 1870 by 101.

Proportions of the Sexes when distinguished in the annual Deaths.—Nineteen Years.

	Annual Average.	Four Years of War. 1862-65.	1866.	18 <b>0</b> 7.	1968.	1869.	1970.
Males,	10,487	13,602	11,601	11,350	12,871	12,777	13,699
Females,	10,602	12,748	12,003	11,369	12,695	18,231	13,598
Number of males to each 100 females, )	98-9	106.7	96-6	<b>99</b> -8	101· <del>4</del>	96-6	100-7

DEATHS in Massachusetts in 1870.—Ages, Sex, Rates.

8 E X.	Under 1 Year.	Under 5 Years.	<b>\$0</b> to <b>80.</b>	All others.	Totals.
Number of deaths, . $ \begin{cases} \text{Males,} & . \\ \text{Females,} \\ \text{Totals,} & . \end{cases} $	3,448 2,758 6,206	5,338 4,535 9,873	1,271 1,612 2,883	7,106 7,467 14,578	13,715 13,614 27,829
Per cent. of deaths { Males, . for each sex, . } Females,	25·14 20·25	38-92 33 31	9·27 11·84	51·81 54·85	100· 100·
Percentage for each sex of all deaths, Totals, .	12·62 10·09 22·71	19·53 16·59 86·12	4·66 5·90 10·56	26· 27·32 53·32	50·19 49·81 100·
Females to 100 males, 1870, .	79-9	84.9	126.8	105-1	99-8
Females to 100 males, 1869, .	<b>86</b> ·5	90-5	120.7	109.7	108.5
Females to 100 males, 1868, .	83.6	85-2	114-	106-2	98.6
Females to 100 males, 1867, .	82.5	86.3	115.5	107·1	100-1
Females to 100 males, 1866, .	81.	87.	110-4	118-2	103-5

# Average Age at DEATH.—1866-1870.

	1866.	1967.	1668.	1869.	1970.
Of all who died,	30-92	80-05	29.92	<b>80·3</b> 8	30-26
Of all above 20 years of age,	<b>52·</b> 08	<b>52·5</b> 8	53.44	53-20	52.42

Aged over One Hundred Years.—Died in 1870.

Honora Regan,   106   Adams,   106   Adams,   102   Norton,   102   Norton,   103   North Reading,   104   Salem,   104   Salem,   104   Salem,   106   Fitchburg,   100   Fitchburg,   100   Haverhill,   100   Haverhill,	Date of Death.	NAMES.		Age.	Place of Death.	sath.	Birthplace.		Whether previously Mar- ried, or Single.
Honora Regan,	1870.	•							
David Makepeace,	Jan. 28,	Honora Regan,		106	Adams,		Ireland,	•	Married.
Joseph Jeffry, 100   North Reading, Ellen Collins, 104   Salem,	Mar. 1,	David Makepeace, .		102	Norton,		Norton,	•	Married.
Abby Myles,       104       Salem,          Abby Myles,       100       Fitchburg,          Moses Wingate,       100       Haverhill,          Hannah Flanders,       100       Chilmark,          Rebecca Dorsey,       103       Brewster,          Mary Hosea,       101       Blackstone,          Lydia Gibson (colored),       100       Boston,          Ellen Payne,       102       Lowell,          Lemuel Bullard,       103       Hinsdale,          Michael Foley,       104       Boston,	Mar. 80,	Joseph Jeffry,	•	100	North Reading,		Lynnfield,	•	Not stated.
Abby Myles,         100         Fitchburg,            Moses Wingate,         100         Haverhill,            Hannah Flanders,         100         Chilmark,            Mebecca Dorsey,         103         Brewster,            Lydia Gibson (colored),         101         Boston,            Ellen Payne,         102         Lowell,            Lemuel Bullard,         103         Hinsdale,            Michael Foley,         104         Boston,	April -,	Ellen Collins,		104	Salem, .		Ireland,	•	Married.
Moses Wingate,         100         Haverhill,         .           Hannah Flanders,         100         Chilmark,         .           Rebecca Dorsey,         103         Brewster,         .           Mary Hosea,         101         Blackstone,         .           Lydia Gibson (colored),         100         Boston,         .           Ellen Payne,         102         Lowell,         .           Lemuel Bullard,         103         Hinsdale,         .           Michael Foley,         104         Boston,         .	May 6,	Abby Myles,		100	Fitchburg, .		Ireland,	•	Married.
Hannah Flanders, 100   Chilmark,	June 15,	Moses Wingate,	•	100	Haverhill, .		Bradford,	•	Married.
Rebecca Dorsey,       103       Brewster,       .         Mary Hosea,       .       101       Blackstone,       .         Lydia Gibson (colored),       .       100       Boston,       .         Ellen Payne,       .       .       102       Lowell,       .         Lemuel Bullard,       .       .       103       Hinsdale,       .         Michael Foley,       .       .       104       Boston,       .	July 14,	Hannah Flanders,		100	Chilmark, .	•	Chilmark,	•	Married.
Mary Hoeea,       .       101       Blackstone,       .         Lydia Gibson (colored),       .       100       Boston,       .         Ellen Payne,       .       .       102       Lowell,       .         Lemuel Bullard,       .       .       103       Hinsdale,       .         Michael Foley,       .       .       104       Boston,       .	Aug. 9,	Rebecca Dorsey,	•	103	Brewster,	•	Cambridge,	•	Married.
Lydia Gibson (colored),       .       100       Boston,       .       .         Ellen Payne,       .       .       .       102       Lowell,       .       .         Lemuel Bullard,       .       .       .       .       .       .       .       .         Michael Foley,       .       .       .       .       .       .       .       .       .       .	Aug. 10,	Mary Hosea,	•	101	Blackstone, .	•	Unknown,	•	Not stated.
. Ellen Payne, 102 Lowell,	Aug. 28,	Lydia Gibson (colored),	•	100	Boston,	•	North Carolina,	•	Married.
. Lemuel Bullard, 103 Hinsdale,	Sept. 30,	Ellen Payne,	•	102	Lowell,	•	Ireland,	•	Married.
. Michael Foley, 104 Boston,	Oct. 2,	Lemuel Bullard,	•	103	Hinsdale, .	•	Barre,	•	Married.
	Oct. 12,	Michael Foley,	•	104	Boston,	•	Ireland,	•	Married.
13,   Mary Dacy,   102   Fall River,	Oct. 13,	Mary Dacy,		102	Fall River, .		Ireland,	•	Married.
Nov. 9,   Rose Brislin,   104   Quincy,   Ireland, .	Nov. 9,	Rose Brislin,		104	Quincy,	•	Ireland,	•	Married.

NATIVITY of those whose Deaths were registered in the year 1870.

Nativity.	. H	FIATE	.eidatentaß	Berkshire.	Joseph	Dakes & Nan- tucket.	Essex.	Frankila.	натрфия.	Hampshire.	Middlesex.	Morfolk.	Plymonth.	Buffolk.	Worcester.
SIBJOT	Whole nunber, Males, Females, . Unknown, .	 . 27,329 . 13,699 . 13,598 . 100.00	476 244 232 100-00	996 537 456 3 100-00	1,862 929 929 4 100-00	163 82 81 100-00	8,496 1,759 1,731 6 100-00	554 260 293 1 100-00	1,499 757 742 -	760 366 393 1 1	5,169 2,499 2,667 3 100-00	1,399 684 712 3 100-00	1,062 585 523 4 100-00	6,428 8,267 3,160 1	3,465 1,780 1,679 6 100.00
American.	Whole number, Males, Females, . Unknown, Percentage,	 21,513 10,816 10,665 78.72	458 234 224 96·21	805 438 364 364 80-82	1,483 787 742 4 79·64	158 81 77 - 96-93	2,898 1,470 1,417 6 82·75	507 242 264 1 91·51	1,132 571 561 75.52	640 800 389 1 1 84.21	3,964 1,988 2,023 3 76.69	1,161 566 592 8 82-99	949 469 476 4 89-86	4,499 2,293 2,205 1 69-99	2,864 1,477 1,381 1,881 82.66
.ingiano a	Whole number, Males, Females, Unknown,	 2,417 2,687 2,730 19.82	15 8 7 7 8·16	155 77 15·56	349 180 169 - 18·75	1.80	559 272 287 15-99	30 14 16 16 - 542	325 163 162 21.68	112 61 51 14·74	1,105 516 589 - 21.38	223 111 112 - 15-94	105 61 44 - 9:89	1,878 938 935 - 29·14	568 284 279 - 16·24
TAOL BEREGE.	Whole number, Males, Females, Unknown, Percentage,	 399 196 203	80 H 1 E	36 21 15 15 -	30 112 18 1-61	1.23	44 17 27 1.26	17 18 18 -	23 19 19 19 19	8 3 1.05	100 45 55 1.93	15 7 8 8 1:07	တက္ကေ ၊ ကို	20 20 - 87	38 19 19 1-10

In the following table a comparison is made with the nativity records of the sixteen previous years:—

NATIVITY of persons deceased during Seventeen Years, 1854-70.

	Ave	AGES.					
	8iz Years. 1854-59.	8ix Years. 1860-65.	1866.	1867.	1968.	1669.	1870.
Whole number, .	20,996	25,459	26,637	22,772	25,603	26,054	27,329
American,	16,880	21,243	18,499	18,278	20,522	21,098	21,513
Foreign,	3,246	8,772	4,708	4,126	4,761	4,713	5,417
Not stated,	870	444	430	368	320	243	899

#### Percentages of those stated.

American, .		83.88	84-92	79.71	81.58	81-17	81.74	79· <b>8</b> 8
Foreign, .	•	16.12	15.08	20-29	18· <b>4</b> 2	18-83	18-26	20.12

In the foregoing table, the children born in America of foreign parents are considered American.

The next table endeavors to remove this difficulty by going back one generation.

Parent-Nativity of all Deceased in 1870.—Arranged by Counties, Sex, and Age.

H															
	PABENTA	AGE.	SRX.	Whole Number.	Under	₩ \$ <b>10</b>	<b>19</b> 28 <b>29</b>	<b>3</b> 3 <b>8</b>	<b>2</b> 2 <b>2</b>	<b>8</b> 3 <b>3</b>	2 2 <b>2</b>	<b>3</b> 3 <b>3</b>	<b>3</b> 3 <b>5</b>	0ver	Not stated.
	Totals,		Totals, Males, Females, Unknown,	. 27,329 . 18,699 . 18,598	6,206 3,482 2,743 81	8,667 1,889 1,777	826 418 412 -	1,588 692 891	2,888 1,271 1,612	2,275 1,036 1,239	1,947 990 957	1,887 999 888	2,058 1,108 950	3,850 1,781 2,119	198 138 60
.ata	American, .		Males,   Females,   Unknown,	6,795 7,010 1,	1,350 1,032 21	631 · 566	154	340 456 -	811	466 594	488 510 -	580 585	744 672 -	1,352	105 27
WHOLE ST	Foreign,	•	Males,   Females,   Unknown,	. 6,120 . 5,870 ., 9	1,729 1,403 9	1,092	231 227 -	316 397	682 766 -	535 622 -	481 426 -	417 287 -	338 260 -	329 408 -	88 1
	Half-Foreign, .		Males,   Females,   Unknown,	. 555	271 240 1	148 139	92 1	8881	16 28 -	801	1-∞0 I	14 6 -	11 8	12 31 -	84 I
	Not stated, .	•	Males, Females,	229	88	18	6 13	10	18	15	118	10	15	888	11 9

Parent-Nativity of all Deceased in 1870.—Arranged by Counties, Sex and Age.—Continued.

Not stated.	846	æ 63	H 1	1 1	41 01 4 -	<b>4</b> ⊣ ।
Over 70	112 46 66	45	HH	1 1	181 86 95	75
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Under 1	65 38 27	88	ဗေ၈	~~~	199 121 75	67 8 8
Whole Number.	476 244 232	218	13	80 44	996 537 456	341 298 3
8rx.	Totals, Males, Females,	Males, Females, .	Males, Females, .	Males, . Females, .	Totals, Males, Females, . Unknown, .	Males, Females, . Unknown, .
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PAREN	Totals, .	American,	Foreign, .	Half-Foreign,	Totals, .	American,
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25	48	<b>9</b> 1	414 229 181 4	95 67 4	120 102	==	8 -1
172	15	O 10	1,862 929 929 4	485 520 4	401 868	22	20
Males, . Females, .	Males, . Females, .	Males, . Females, .	Totals, Males, Females, . Unknown, .	Males, . Females, . Unknown, .	Males, . Females, .	Males, Females, .	Males, . Females, .
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Foreign, .	Half-Foreign,	Not stated,	Totals, .	American,	Foreign, .	Half-Foreign,	Not stated,
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Parent-Nativity of all Deceased in 1870.—Arranged by Counties, Sex, and Age—Continued.

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	PAREN	Totals, .	American,	Foreign, .	Half-Foreign, .	Not stated,	Totals, .	American,
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is lot in pomoso in G	Br.	Totals, . Males, . Females, .	Males, . Females, .	Males, . Females, .	Males, . Females, .	Males, . Females, .	Totals, Males, Females, Unknown,	Males, Females, . Unknown,
	Whole Number.	88. 88.	77.	တဆ	ਜ।	н I	8,496 1,759 1,781	1,031
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Males, Females, Unknown,	Males, Females,	Males, Females,	Totals, Males, Females, Unknown,	Males, Females, Unknown,	Males, Females	Males, Females	<b>Males,</b> Females,
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Foreign,	Half-Foreign, .	Not stated,	Totale	American,	Foreign, .	Half-Foreign, .	Not stated,
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Parent-Nativity of all Deceased in 1870.—Arranged by Counties, Sex, and Age—Continued.

	Cour	Totals,	American,	Foreign,	Half-I	Not stated,	Totals,	     American,
	PARENT	•	can,	Ę.	Half-Foreign, .	ated, .	•	can,
	AGE.	• .	•	•	•	•		. •
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	SEX.	Totals, Males, Females,	Males, . Females, .	Males, . Females, .	Males, . Females, .	Males, . Females, .	Totals, Males, Females, . Unknown, .	Males, Females, Unknown,
Whole	Number.	1,499 757 742	346 352	369	31 26	11 15	760 366 393 1	271
Under	F	328 188 140	67 40	107 92	13	<b>н</b> н	135 67 67 1	87 41 1
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9	\$ <b>€</b>	109 54 55	32	31 18	1 ==	67	26 29	15
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Foreign,	Half-Foreign,	Not stated,	Totals,	American,	Foreign,	Half-Foreign,	Not stated,
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Males, .   Females, .	Males, . Females, .	Males, . Females, .	Totals, Males, Females, Unknown,	Males, . Females, . Unknown, .	Males, . Females, . Unknown, .	Males, . Females, .	Males, . Females, .
120	<b>6</b> 60	es +1	5,169 2,499 2,667	1,092 1,258 1	1,244 1,258 2	107 87	64
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218	C) ()	1 1	342 365 1	95 118	217 220 -	828	014
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13	<del></del> 1	1 1	525 211 314 -	89 159 -	112 151 -	10 CJ	70 61
212	1 1	1 1	449 197 252 -	<b>28</b> 101 -	107 140 -	<b>∞</b> 4	ස <del>4</del>
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Parent-Nativity of all Deceased in 1870.—Arranged by Counties, Sex, and Age—Continued.

	ا متم ا	03 I	<b>80 03</b>	1 1		41-18	1 00 1
Not stated.		a > 1	<u> </u>			- - -	Ø 70 I
Over 70	261	99	16 23			275 143 182	129
3 t 6	121 70 51	88 -	15 13	11	H I	118 69 49	56 -
<b>5</b> 3 <b>5</b>	88 144 1	38 1 88	14 9	<b></b> 1	1 1	248 1	1 28 30
60 to 60 00 00 00 00 00 00 00 00 00 00 00 00	844 -	1 28	21 16	1 1	1 1	38 188	272
8 3 4 6 3 6	114 50 64	38	23	1 1	1	84 87 47	833
<b>8</b> 5 <b>8</b>	158	8 8 °	. 27	80	1 (	1 22 88	25 1
<b>5</b> 5 <b>5</b>	4.74 7.4	28	17	1	11	67 29 38	2821
10 to 61	39 18 18	G G I	118		1 🗝	21 9 12	1 70
H 3 M	157 85 72	80	45 34	ဆ ဗ	ତୀ ତୀ	87 40 47	34
Under	292 161 128 8	75 68 8	65 45	20 15	<b>⊣</b> !	169 92 73 4	523
Whole Number.	1,399 684 712 8	393 452 8	257 227	27	6	1,062 535 523 4	416 423 2
28 EX.	Totals, Males, Females, Unknown,	Males, . Females, . Unknown, .	Males, -	Males, . Females, .	Males, . Females, .	Totals, Males, Females, Unknown,	Males, Females, . Unknown, .
	<u> </u>	حبت	ښ	منہ	٠٠٠	٠٠٠	حنہ
AGE.	•	•	•	•	•	•	•
PARENTA	Whole number,	American, .	Foreign, .	Half-Foreign, .	Not stated,	Whole number,	American, .
Courtine.	MORFOLE COUNTY.					Ргумотти Со.	

1910.]		80	) WINTER I	ODOM	D. V A. J	TOME	·•
- 1 1	1 1	1 1	ରା । ସେ ।	1631	1 1	1 1	11
22 ·		12	489 190 299	152	95	77	ස වැ
881	11	H 1	366 194 172	86 74 -	104	15	8 1
01 4 1	11	1 1	488 263 175	82,	169 105	40	₩ 80
211	1 1	I I	242 242 1	101	181	21-1	41
521	1 1	R	839 818 826 -	96 105	208	∞ c <sub>0</sub> 1	2
118	1 !	.1 1	705 814 391	106	224 269	102	8 9
<b>600</b> I	1	H 1	309 134 175	88 92 I	93		
	61 H	1 1	187 102 -	13	22	111	<b>⊣</b> 1
118	1 14	1=	1,017 514 508	119 88	323	<b>22</b>	& <b>&amp;</b>
6142	<b>614</b>		1,746 955 780 1	258 199 1	550 454	100 108	47 34
84%	10	70 ED	6,428 8,267 8,160	968	2,024	201	74
• • •	• •	• •		• .	•	•••	• •
Males, Females, Unknown,	Males, Females,	Males, Females,	Totals, Males, Females, Unknown,	Males, Females, Unknown,	Males, Females,	Males, Females,	Males, Females,
منہ	٠	منہ	<u></u>	<u>ښ</u>	٠٠٠	~ <del>~</del> ~	٠٠٠
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	ign,	ਚੰ		<u>.</u>		ign,	ę́
ďa V	For	state	, Si	American,		Fore	state
Foreign, .	Half-Foreign, .	Not stated,	Totals,	Ame	Foreign, .	Half-Foreign, .	Not stated,
	нтоов	rr.f		ATRUOUS.		ang .	

Parent-Nativity of all Deceased in 1870.—Arranged by Counties, Sex, and Age—Concluded.

	Not stated.	ထ ଥାଇ ।	<b></b> 1 1	1101	e 1 1	۱ 🗝
	0 ver	522 256 266	204 -	855	0100 1	10
	<b>3</b> 5 <b>6</b>	248 143 105	110	21	i	01 80
	<b>3</b> 3 <b>3</b>	231 122 109	. 81	288	H11	1 1
	<b>3</b> 3 <b>3</b>	205 108 97	70	အ ကို ၊	1 1 1	1-
	<b>3</b> 3 <b>3</b>	269 116 153	98 -	65	HH	8 11
	<b>5</b> 5 <b>8</b>	367 173 194	91 115 -	78	1 1 1	41
	<b>2</b> 2 <b>2</b>	215 94 121	47 65 -	51	1001	<b>⊣</b> ∞
	<b>3</b> 8 <b>5</b>	111 58 58	880 1	27 38 -	61   1	i I
	# \$ #	510 277 283	92 65	167 145 -	17 20 -	— თ
	Under 1	779 431 842 6	197 136 2	206 187 8	26 16 1	C1 C3
	Whole Number.	8,465 1,780 1,678	980	721 684 8	56 1	23 19
	BEX.	Totals, Males, Females, Unknown, .	Males, . Females, . Unknown, .	Males, Females, Unknown, .	Males, . Females, . Unknown, .	Males, . Females, .
			منہ	<u>حبح</u>	حبح	٠,٠
$\  \ $	AGE.	•	•	•	•	•
	E 1	•	•	•	. (2 <u>8</u>	•
	PAREN	Totals, .	American,	Foreign, .	Half-Foreign,	Not stated,
.83	аптитоО	<u> </u>	.ттиооО	яятаяо	но М	

Comparing the results shown in the foregoing table with those recorded in 1869, we find that the deaths of those whose parents were both American have increased by 84; of those whose parentage was Foreign the number has increased by 967; while the deaths of those whose parentage was mixed, one parent being American and the other Foreign, have increased by 63. Of the class "not stated," 484 are reported in 1870, being 161 more than in 1869.

The next table makes a comparison of four years, presenting a striking contrast in the mortality at various ages between the native and the foreign elements of our population. In calculating the percentages, those of half-foreign parentage are divided equally.

					Under 5 years.	5 to 20	<b>30</b> to <b>50</b>	Over 50
	American parents,				2,947	1,197	8,182	4,958
	Foreign "	•	•	•	4,432	987	2,536	1,393
1867,	Half-Foreign "	•	•	•	504	101	100	58
1001,	Percentag	ges.					1	
	American parents,	•			40-6	54.6	55-5	77.8
	Foreign "	•	•	•	59.4	45.4	44.5	22.2
	American parents,	_	_		3,501	1,189	8,280	5,248
	Foreign "	•	•	•	5,067	1,193	2,768	1,855
1000	Half-Foreign "		:	•	667	110	82	7,69
1868,	? Percentag	768.						
	American parents,				41.5	49.9	54.2	78.6
	Foreign "	•	•	;	58-5	50-1	45.8	26. <b>4</b>
	American parents,		_		8,588	1,250	3,837	5,492
	Foreign "	•	•		4,854	1,194	8,018	1,922
1869.	Half-Foreign "	•	•	•	721	110	90	81
TOOR,	Percenta	aes.				ļ	1	
	American parents,		_		42.8	51.1	52.5	78.8
	Foreign "	•	•	•	57.2	48-9	47.5	26.2
	American parents,				8,601	1.107	8.474	5,645
	Foreign "	•	•	•	5,284	1,171	8,462	2,082
1076	Half-Foreign "	•	:	:	799	104	84	82
1870,	Percenta	aes.				1		1
	American parents.				41.8	48.7	50-1	72.8
	Foreign "	•	•	•	58-7	51.8	49.9	27.2

From this comparison, carried through a series of years, two facts are evident, namely, that the mortality among children is much greater in those of Foreign parentage; and that the greater part of our population past middle life still continues to be of native stock.

### CAUSES OF DEATH.

The following table shows the weather record of 1870, as made at the observatories of Cambridge and Amherst.

						CAMBR	IDGB.	Амие	ret.
	MO	NTH	B.			Mean Temperature.	Rain-Fall.	Mean Temperature.	Rain- <b>Fali.</b>
January	•	•	•	•		82.7	5-69	80-8	5.87
February,	•		•	•	•	24-5	4.22	25.8	5.25
March, .	•	•		•		80.0	4.66	80-9	2.71
April, .	•	•		•		<b>4</b> 6-6	6.18	48.8	8.70
May, .	•	•	•	•		57.6	1.97	58-3	1.72
June, .		•	•			68-5	<b>3</b> ·83	70-4	2.78
July, .		•	•	•		72.9	1.20	73.5	2.53
August, .	•	•	•	•	•	71.8	2.03	71-1	2.83
September,		•	•	•	•	62·7	1.81	62.3	1.75
October,		•	•	•		58.8	3.76	52∙	4.49
November,		•	•	•		41·1	3.52	89-1	3.28
December,				•	•	82.6	2.71	28.	1.84
Mean temp	erato	re for	the	year,		49.5	-	49.2	-
Total rain-f	all ir	inch	98,	•	•	_	41.58	-	88.70

The percentage of deaths from *zymotic* diseases in 1870 was 25.6; from constitutional diseases 26.6; from local diseases 28; from developmental diseases 15.6, and from violent deaths 4. These percentages do not differ materially from those of the previous year.

The following table presents a comparative view of the mortality from the most destrutive *zymotic* diseases during the past seven years:—

YEARS.	Dysentery.	Typhus.	Whooping Cough.	Croup.	Diphtheria.	Measles.	Scarlet Fever.
1864,	1,186	1,344	235	<b>76</b> 8	1,281	820	1,508
1865,	1,548	1,694	363	504	672	136	807
1866,	949	1,091	287	431	399	109	885
1867,	658	965	297	356	251	194	828
1868,	685	896	247	485	297	287	1,369
1869,	481	1,205	820	473	296	222	1,405
1870,	471	1,833	830	434	242	269	683

During the year 1870, one hundred and thirty-three persons were victims of railroad accidents, twenty-six died by poison, eighty-nine from burns and scalds, three hundred and six were drowned (including those reported "lost at sea"), ninety-one committed suicide and twenty-nine were murdered.

		Order of	Succession o	f Ten Prin	cipal Diseas	Order of Succession of Ten Principal Diseases.—Nine Years.	ears.	To a standard by	
1065.	1968.	1964.	1866.	1906	1967.	1966.	1969.	44	K ///
Consumption,	Consumption,	Consumption,	Consumption,	Consumption,	Consumption,	Consumption, Consumption,	Consumption,	Consumbasa,	
Scarlatina,	Paeumonia,	Pneumonia,	Typhus,	Pneumonia,	Infantile,	Paeumonia,	Pneumonia,	Cholera Infantum,	1,914
Infantile,	Typhus,	Scarlatina,	Dysentary,	Infantile,	Pneumonis,	Cholers Infan- tum,	Cholera Infan- Cholera Infan- Pneumonia, tum,	Pneumonia, .	1,718
Pneumonia,	Diphtheria,	Old Age,	Pneumonia,	Old Age,	Old Age,	Scarlatina,	Scarlatina,	Old Age,	1,444
Old Age,	Scarlatina,	Typhus,	Old Age,	Typhus,	Cholera Infan-Old Age, tum,	Old Age,	Old Age,	Typhus, .	1,888
Typhus,	Old Age,	Infantile,	Infantile,	Cholers Infan- Typhus,	Typhus,	Heart Disease,	Typhus,	Paralysis and Apoplexy,	1,024
Cholera Infan- tum,	Infantile,	Diphtheria,	Cholera Infan- Dysentery, tum,	Dysentery,	Heart Disease,	Apoplexy and Paralysis,	Apoplexy and Paralysis and Paralysis, Apoplexy,	Heart Disease, .	878
Brain Disease,	Cholera Infan- tum,	Cholera Infan-	Heart Disease,	Heart Disease,	Scarlatina,	Typhus,	Heart Disease,	Infantile,	181
Heart Disease,	Dysentery,	Dysentery,	Scarlatina,	Apoplexy and Paralysis,	Paralysis and Dysentery, Apoplexy,	Dysentary,	Infantile,	Scarlatina, .	88
Diphtheria.	Croup.	Apoplexy and Diphtheria.		Croup.	Dysentery.	Infantile.	Cephalitis.	Cephalitis, .	601

The NUMBER of Deaths from several Specified Causes, of each Sex, in each Month, and at Different Specified

					Periods	of Life,	which u	eere reg	ristered (	Periods of Life, which were registered during the year 1810	e year	1870.			
	·		]		Diphtherfa. Dysontery.	Dysentery.	Турћав.	Measles.	Scarlatina.	Scarlatina. Erraipelas.	Croup.	Cholera Infantum.	Teething.	Consump- tion.	Paeumonia.
	Totals,			•	242	471	1,333	569	683	129	484	1,914	808	5,003	1,718
_	Males, .	•	•	•	116	266	686	141	861	65	233	686	155	2,277	868
EX.	Females, .	•	•	•	125	202	269	128	322	49	201	923	153	2,726	98
S.	Not stated,	•	•	•	-	ı	1	.1	ı	1	1.	63	1	ı	1
_	January,.	•	•	•	81	-	8	24	88	15	31	16	12	385	203
	February,	•	•	•	8	61	22	\$	2	15	88	10	11	872	305
	March, .	•	•	•	13	œ		40	8	15	46	11	7	430	243
	April, .	•	•	•	14	10	89	34	20	11	21	19	10	433	167
	May, .	•	•	•	13	ဧာ	62	32	26	œ	88	8	17	445	153
•8E	June, .	•	•	•	9	19	22	88	48	۵	54	29	12	854	103
ITN	July, .	•	•	•	21	25	n	97	46	лO	7	269	61	406	18
oM	August, .	•	•	•	13	178	152	8	58	ro	18	869	22	488	22
	September,	•	•	•	8	114	508	7	94	•	83	825	83	456	83
	October, .	•	•	•	83	46	234	ಣ	40	<b>6</b> 0	41	129	4	418	101
	November,	•	•	•	88	18	164	9	53	16	29	81	11	894	159
	December,	•	•	•	34	က	109	6	75	18	72	<b>∞</b>	12	427	149
	Not stated,	•	•	•		<u> </u>	<b>–</b>	ا 	' 	1	' 	'	ı 	-	'

1,718	989	88	55	87	101	105	138	148	174	180	88	<b>∞</b>
6,008	824	41	8	464	1,358	852	620	470	888	250	55	17
808	808	ı	ı	ı	t		1	1	1	i	1	ı
1,914	1,914	1	1	,	1	1	1	1	ı	1	1	1
484	875	83	4	1	-	1	-	i	•	ı	ı	1
129	£	1	<b>69</b>	-	<b>0</b> 0	12	10	19	=======================================	14	3	ı
683	460	152	41	=======================================	13	63	<b>6</b> 3	-	1	ı	1	ı
269	218	24	61	æ	\$	89	ю	89	-	61	-	1
1,888	184	11	109	190	361	145	8	8	2	20	Ħ	-
471	278	14	6	4	17	16	14	98	31	8	#	ì
242	188	22	17	10	6	2	Ø	83	*	,	ı	
-	•	•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•	•	•
Tot ,	Under 5,.	5 to 10,.	10 to 15,.	15 to 20,.	20 to 30,.	80 to 40,.	40 to 50,.	50 to 60,.	60 to 70,.	70 to 80,.	Over 80,.	Unknown,
_	_					_	₩.			_		

The Percentages of Deaths from several Specified Causes, of each Sex, in each Month, and at Different Specified Periods of Life which mere recistered during the near 1870

		Diphtheria. Dysentery.	Dysentery.	Typhus.	Measles.	Scarlatina. Erysipelas.	Erysipelas.	Croup.	Cholera Infantum.	Teething.	Consump- tton.	Pneumonia.
•	•	100-00	100-00	100-00	100-00	190-00	100-00	100-00	100-00	100-00	100-00	100.00
•	•	47-93	56.48	47.71	52.42	. 52-85	50.39	<b>23.69</b>	51.67	50-83	45.21	40.94
•	•	51.65	43.52	62-58	47.58	47.15	49.61	46.31	48.22	49-67	54.49	20-08
•	•	÷	ı	1	i		1	ı	11.	1	1	,
•	•	18.21	-21	7.20	8-92	12.89	11.63	8-52	\$	8-90	7-70	11.82
•	•	8-26	-43	4.12	14.87	10-25	11.63	8-99	-58	8.57	7-44	11.98
•	•	28-9	1.70	4.73	14.87	11-71	11.63	10-60	.57	2.27	8.59	14.15
•	•	62-9	1.06	4.73	12.64	8.64	8.52	4.85	66.	8.25	8.65	9-72
•	•	28.9	\$	4.65	11.89	8-19	6-20	2-60	1.05	5.25	8.80	8.90
•	•	2-48	4-03	4.05	10-41	7-03	86-98	5.53	5.98	3.90	7.08	9.00
•	•	4.96	17.83	5.33	29-6	6.73	8.88	1.61	81.19	19-80	8-10	4.71
•	•	2.37	36.73	11.40	7.43	4.10	3 88	4.15	86-47	17.86	9.75	4.19
•	•	12.40	24.20	15.68	5.60	2.88	4.65	89.9	16.98	17.21	9-11	4.77
•	•	9.20	11.6	17.55	1.12	2.86	6-20	9-45	6.74	13.31	8.26	<b>5</b> ·88
•	•	13.64	2.78	12.30	2.23	7.78	12-40	15-44	1:21	6.51	7.88	9-56
•	•	14.05	49.	8.18	8.35	10-98	12.40	16.59	42	8-90	8.58	8-67
•	-	1	1	\$	1	ı	ī	1	•	ī	80.	ł
					<del></del>	80.	80.	80.	80	80	1 80	

_		1.92										
100-00	6-48	.82	1.88	9-27	27.14	18-44	12.89	9-30	1.78	4.99	1.10	<b>\$</b>
100-00	100.00	1	1	•	1	1	1	ı	•	1	1	1
100-00	100.00	1	1	1	1	ı	ı	1	ı	ł	ŧ	ı
100-00	86-41	12-21	95	1	ģ	1	.28	1	ı	ı	i	ı
100-001	83.34	1	1.55	•78	6.20	9-30	7.75	14.78	8.52	10-85	86-9	1
100-00	67-85	22.28	9.00	1.61	1.90	62	<b>‡</b>	.15	1	1	ı	1
100-001	81.04	8-92	.75	1:11	2.28	1:11	1.86	1:11	.87	.75	-87	.87
100-00	10-05	2.88 2.88	8.18	14.25	27.08	10.88	6.75	9.00	4.80	4.48	1.73	.62
100-001	96-29	2.07	1.28	38.	8.61	8.40	2.87	29.9	6.57	6.16	8.71	ı
100-00	20-29	28.55	7.05	4.13	2-07	5.88	88	<b>\$</b>	1.24	1	ı	42
-	•	•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•	•	•
Totals,	Under 5, .	5 to 10,.	10 to 15,.	15 to 20,.	20 to 80,.	80 to 40,	40 to 50,.	50 to 80,.	60 to 70,.	70 to 80,.	Over 80, .	Unknown,
	_		_	_		.04	~~			_		

The NUMBER of Deaths from several Specified Causes, of each Sex, in each Month, and at Different Specified Periods of Life, which were registered during the Eight Years, 1863–70.

				Diphthe	orta. Dy	Diphtberia, Dysentery.	Typhus.	Measles.	Scarletina.	Scarlatina. Erysipolas.	Croup.	Cholera Infantum.	Teething.	Consump- tion.	Pneumonia.
	Totals,			4,808		,134	0,970	1,678	8,879	1,272	4,315	10,459	2,118	87,122	18,140
_	Males, .	•		2,210		3,594	5,187	998	4,241	647	2,218	5,482	1,097	16,968	6,767
EX	Females, .	•	•,	2,594		3,533	4,781	811	4,135	625	2,096	4,958	1,015	20,147	6,371
8	Not stated,		•	4		1	<b>63</b>	-	နာ	ı	<b>-</b>	19	-	2	61
_	January,.			497		29	649	102	1,083	120	497	48	101	8,088	1,548
	February,	•		. 415	<u>م</u>	69	531	137	924	152	428	48	26	2,947	1,595
	March, .		•	388	Ć)	65	803	178	1,008	123	420	42	107	3,393	1,832
	April, .		•	364	₩	86	548	203	888	135	338	20	88	8,219	1,445
	May,		•	307		48	513	204	820	181	274	85	92	3,307	1,170
.8I	June, .	•		304		180	451	211	622	103	206	355	94	2,833	202
ITN	July, .	•	•	835		912	282	211	504	89	170	2,281	256	2,891	531
oM	August, .			. 288		2,408	1,045	178	368	28	188	4,238	405	8,209	417
	September,			405		2,106	1,415	63	871	<b>2</b> 5	286	2,370	410	8,154	264
	October, .			. 512		298	1,604	47	443	74	400	802	283	3,039	801
	November,	•		483		223	1,171	19	<b>6</b> 04	110	292	157	114	8,010	1,149
	December,		•	. 518		42	841	88	785	112	200	28	111	8,013	1,377
	Not stated,	•	•		<del></del>	.4t	12	н	4	61	'	C1	-	18	4

18,140	4,960	403	150	298	787	852	959	1,126	1,400	1,403	786	67
87,122	2,809	439	682	8,097	9,831	6,969	4,781	8,430	8,077	1,906	416	185
2,118	2,112	-	•	ı	1	1	1	ı	1	1	'	ı
10,459	10,459	ı	•	ı	ı	ı	ı	1	ı	'	١	1
4,315	8,738	512	35	2	10	4	80	1	i	ı	1	10
1,272	362	88	8	84	100	126	88	126	140	151	73	ĸ
8,379	5,543	2,103	880	158	112	32	Ħ	21	10	ဧာ	-	14
1,678	1,829	151	18	87	64	21	21	80	10	12	4	ro
9,970	984	661	746	1,369	2,259	1,133	788	642	864	203	207	<b>4</b>
7,184	8,918	268	175	182	278	277	872	887	418	454	278	35
4,808	2,868	1,318	439	208	213	121	48	31	[23	20	ı	16
•	•	•	•	•	•	. •	•	•	•	•	•	•
•	•		•	•	•	•	•	•	•	•	•	•
•	. <b>.</b>	•	•		•	•	•				•	•
Totals, .	Under 5,.	5 to 10,.	10 to 15, .	15 to 20,.	20 to 30, .	80 to 40,.	40 to 50,.	50 to 60, .	80 to 70, .	70 to 80, .	Over 80, .	Unknown,

FGEB.

					Diphtheria,	Diphtheria, Dysentery.	Typhus.	Measles.	Scarlatina.	Erysipelas.	Croup.	Cholera Infantum.	Teething.	Consump- tion.	Pnenmonia.
	Totals,		•	•	100-00	100-00	100.00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00
_	Males, .	•	•	•	45.97	50.38	52.03	51.61	50-61	20.86	51-40	52-41	51-92	45.71	51.50
YEX	Females, .	•	•	•	53.95	49.52	47.95	48.33	49.35	49.14	48.58	47-41	48.03	54.27	48-49
, ,	Not stated,		•	•	9	.10	<b>3</b> 0.	90-	\$	1	05	•18	Ġ	9	-01
	January,.	•	;	•	10.34	ŝ	6.51	80.9	12.33	9-43	11.52	•46	4.78	8.32	11.78
	February,		•	•	8.63	26.	5.32	8-17	11.08	11.95	08.6	-47	4.59	7.94	12.14
	March, .	•	•	•	7.95	-91	6.05	10.31	12.03	29-6	9.73	•64	2.08	9.14	13.94
	April, .	•	•	•	7.57	1.19	2.20	12.10	10.66	10-61	7.83	29.	4-21	8.67	11.00
	May, .	•	•	•	8:38	1.11	5.15	12·16	8.48	10.30	6.35	88.	4.50	8.91	8.91
us.	June, .	•	•	•	6.32	2.52	4.52	12.57	7.42	8.10	4.77	2.12	4.45	7.63	5.38
TN	July, .	•		•	6.97	12.78	2.89	12.57	6.01	5.35	8.94	21.81	12.12	7.78	4.04
OTAT	August, .	•	•	•	2.38	33.75	10.48	10-49	4.39	4.56	4.36	40.52	19-17	8-65	3.17
	September,	•	•	•	8-42	29.52	14.19	8.75	4.43	9-90	6 17	22.66	19-40	8.50	4.29
	October, .			•	10-65	12.18	16.09	. 5.80	5.29	28-9	9-27	7.70	11.03	8.18	60.9
	November,		•	•	10.05	8.12	11.75	3.64	7.21	8.65	13.14	1.49	6.39	8.10	8.75
	Desember,	•	•	٠	10.67	1:11	8-43	2.30	9.37	8.80	13.12	92.	5.25	8.12	10.48
	Not stated.				80.	ğ	GI.	90	2	9		5		•	9

100-00	87.75	8.07	1.14	2.27	2.99	6.48	7.80	8.56	10-65	10.68	2.80	·51
100-00	6.22	1.18	1.84	8.84	26-48	18.78	12.88	9-24	8-29	5.13	1.12	.20
100.00	99-92	9	1	ı	ı	1	i	ı	ı	ı	1	ı
100.001	100.00	1	1	ı	ı	ı	1	ı	ı	i	ı	ı
100-00	86-68	11.87	.82	•16	11.	80	<b>.</b>	ł	1	. 1	0	82.
100-00	27.67	3.00	2.28	2.67	2.86	06-6	7.78	9-83	11-01	11.87	5.74	-39
100-00	66.16	26.10	4.65	1.88	1:34	88.	.13	•14	ş	ģ.	÷	.17
100-00	79-20	00-6 6	1.07	2.20	8.81	1.25	1.25	.86	99	ŗ	-24	-30
400-00	9.87	8-63	7.48	18.78	22.65	11.86	7.90	6-44	99-9	5.05	5.08	-65
100-001	24.85	2.98	2.45	1.86	3.83	88.88	8-91	4.72	2.86	6.87	8.87	.45
100-001	49-18	27.81	9-13	4.28	4-48	5.64	1.00	•	69.	7	1	. <b>8</b> 1
-	•	•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•	•	•
Totals,	Under 5,	5 to 10,.	10 to 15,.	15 to 20,.	20 to 80,.	80 to 40,.	40 to 50,	50 to 60,.	60 to 70,.	70 to 80,.	Over 80,.	Unknown,
	_					ES.	ĐV					

Diphtheria.—Since 1864, this disease appears to have been steadily diminishing in its fatality, and the number of deaths the present year is less than in any of the previous ten years. The alarming increase of mortality reported during the five years, 1860–64, has not been approached at any season since, and diphtheria is no longer included, as at that time, among the most fatal diseases. This immunity is to be accounted for partly by greater correctness in diagnosis of the disease at the present time, but chiefly by the absolute remission of epidemics of diphtheria, an affection which is avowedly very fatal.

Dysentery also appears to have been subject to a gradual decrease in its fatality, the number of deaths having diminished from 1,186 in 1864 to 471 in 1870. The low rates of ten years ago are again reached, and if we may draw any inferences from the experiences of previous years, in the periodic rise and fall of mortality from dysentery, approaching something like regularity, we may, with tolerable certainty, predict an increased death-rate from this cause before many summers shall have passed. The relative distribution of the mortality in the various counties is evidence of the sporadic nature of the disease, during 1870. As usual, the mortality is greatest during August and September (182 of the 471 deaths having occurred in these months); and more than one-half the deaths (273) were of children under five years of age.

Typhus.—The number of deaths was greater by 128 than that reported for 1869. The fatality was greatest in the ages between twenty and thirty, and was nearly equally divided between the two sexes. The whole number of deaths reported (including 134 under five years of age, classed as usual, with doubtful propriety, as infantile fever), was 1,333. The autumnal months, and especially September and October, exhibit the greatest mortality.

Measles.—Two hundred and sixty-nine deaths were reported in 1870; of these, two hundred and eighteen were children under 5 years of age. The mortality was distributed through all the counties except Dukes, Nantucket and Plymouth. The first six months of the year show a considerably larger proportion of deaths than the last six months.

Scarlatina.—There were 683 deaths, a diminution of more than one-half as compared with the report of 1869. Of the deaths recorded, 460 were under the age of five years, and 612 were under ten years of age. The mortality was distributed quite equally through all the months of the year. None of the counties were exempt, but (as compared with deaths from other causes) the disease was especially fatal in Suffolk, Worcester, Middlesex, Hampshire, Hampden and Bristol.

Cholera Infontum caused the death of 1,914 young children in 1870, 490 more than were reported in 1869. The deaths from this cause comprised 7·1 per cent. of the whole number of deaths, and this ratio is showing an alarming increase from year to year. The average percentage for the past twenty-nine years, as compared with the deaths from all causes, is 3·70, and for the past five years (1865-69) it is 4·95. In the order of relative mortality, cholera infantum takes its place as the second in the list, standing next to consumption, a position it has never before occupied. This striking promotion of a disease so deadly in its inroads on infant life, should need no other argument to enforce the lessons which it so plainly teaches, namely, that more emphatic attention should be paid to the well-known and preventable causes and that the need for the purification of crowded centres of population is more imperative than ever.

The percentage of deaths from cholera infantum to deaths from all specified causes in the various counties was as follows: Barnstable, 2.9; Berkshire, 4.4; Bristol, 4.7; Dukes and Nantucket, 0.8; Essex, 6.6; Franklin, 4.4; Hampden, 6.5; Hampshire, 6.7; Middlesex, 9.1; Norfolk, 5.9; Plymouth, 3.9; Suffolk, 7.8; Worcester, 8.

Consumption.—There were 5,003 deaths in 1870, with an excess of 449 females. The following tabular statement shows that the changes of the seasons exercise but little influence on the fatality of New England's scourge:—

First Quarter,.	•			1,187	Third Quarter,	•	•	•	1,349
Second Quarter,	•	•	•	1,232	Fourth Quarter,	•	•	•	1,285

If comparison is made according to the divisions of the seasons strictly, the numbers are as follows:—

Spring, .	•	•	•	•	1,308	Autumn,	•		•	•	1,268
Summer,.	•	•	•	•	1,247	Winter,	•	•	•	•	1,185

### DEATHS from Consumption at certain ages.—Three Years.

					Under 15	15 to 50	Over 50
(Numbers, .					418	2,912	1,095
$1868, \ \begin{cases} \text{Numbers,} & \cdot \\ \text{Percentages,} \end{cases}$					9-84	65-88	24.78
(Numbers, .			•	٠.	448	3,060	1,134
$1869, \begin{cases}{l} {\bf Numbers,} & . \\ {\bf Percentages,} \end{cases}$					9.55	65.99	24.46
(Numbers, .	•				459	3,364	1,163
1870, { Numbers, . Percentages,	•	•	•		9-21	67-47	28:33

Twenty-seven per cent. of all who died from consumption in 1870 were between twenty and thirty years of age.

# DEATHS from Consumption in the Counties, 1870.—Percentages.

co	UNI	riks.			Population—	Number of Deaths.	Percentage to Deaths from all Specified Causes.	Persons living to one Death.
Barnstable,	•				32,774	102	22.5	321
Berkshire,		•			64,827	156	17.0	415
Bristol, .			•		102,886	411	23.4	250
Dukes and I	Nant	ucket,			7,910	22	14.7	359
Essex, .		•			200,843	742	21.3	271
Franklin,		•			82,635	98	17.8	351
Hampden,	•	•	•	•	78,409	278	19.8	282

Deaths from Consumption in the Counties—Concluded.

co	UN	TIES			Population— 1870.	Number of Deaths.	Percentage to Deaths from all Specified Causes.	Persons living to one Death.
Hampshire,		•	•		44,388	150	20.9	296
Middlesex,			•		274,353	923	18.3	297
Norfolk,.					89,443	246	18·1	363
Plymouth,					65,865	221	21.9	296
Suffolk, .			•		270,802	1,040	15.3	260
Worcester,	•	•	•	•	192,716	619	18.5	311

The following table presents a view of the relative mortality of the counties in 1870, as regards consumption compared with all other diseases.

Order of Mortality by Counties.—1870.

By all Diseases.	By Consumption alone.	By Consumption in comparison with all other Diseases.
Suffolk.	Bristol.	Bristol.
Dukes and Nantucket.	Suffolk.	Barnstable.
Hampden.	Essex.	Plymouth.
Middlesex.	Hampden.	Essex.
Bristol.	Hampshire.	Hampshire.
Worcester.	Plymouth.	Hampden.
Essex.	Middlesex.	Worcester.
Hampshire.	Worcester.	Middlesex.
Franklin.	Barnstable.	Norfolk.
Plymouth.	Franklin.	Franklin.
Norfolk.	Dukes and Nantucket.	Berkshire.
Berkshire.	Norfolk.	Suffolk.
Barnstable.	Berkshire.	Dukes and Nantucket.

The slight increase in the actual and the relative mortality from consumption reported in 1870, does not seriously affect the positive tendency toward amelioration as regards the fatality of this disease, a fact made evident in the following table:—

. MORTALITY from Consumption in Massachusetts.—Eighteen Years.

	3	(EAI	R 8 .		Population.	No. of Deaths from Consump- tion.	Deaths from Con- sumption to each 100,000 liv- ing
1858,	•				1,075,007	4,593	427
1854,					1,103,351	4,611	418
1855,			•		1,132,364	4,750	419
1856,	•				1,151,455	4,701	408
1857,					1,170,862	4,625	<b>3</b> 95 .
1858,					1,190,592	4,574	384
1859,		•			1,210,656	4,704	388
1860,					1,231,066	4,557	870
1861,					1,238,110	4,522	365
1862,	•				1,245,310	4,269	343
1863,					1,252,500	4,667	372
1864,					1,259,710	4,733	376
1865,					1,267,031	4,661	368
1866,				•	1,303,116	4,600	353
1867,					1,340,229	4,362	325
1868,		•	•		<b>1,378,3</b> 98	4,437	322
1869,					1,417,654	4,659	328
1870,		•			1,457,351	5,003	843

Pneumonia proved fatal in 1870 to 1,718, a number 18 less than that reported the previous year. The sexes were almost equally divided.

The largest mortality occurred in March, and the least was in September. The first three months of the year contributed very nearly 38 per cent of the whole mortality.

Six hundred and eighty-six of the deaths (39 per cent. of the whole number) were of children, and four hundred and forty-two (twenty-six per cent. of the whole) occurred in persons above 60 years old; thus, considerably more than half the mortality occurred at the extremes of life.

DEATHS from Pneumonia in the Counties, 1870.

		. C	NUD	TIES	١.			Number.	Percentage to Deaths from all Specified Causes.
Barnstable,			•	•	•	•		20	4.4
Berkshire,	•							77	8.4
Bristol,			•					104	5.9
Dukes and	Nan	tucke	:t, .					3	2.
Essex, .				•			. [	202	5.8
Franklin,		•			•	. •		37	7.1
Hampden,				•				107	7.4
Hampshire,			•	٠.		•		62	8-6
Middlesex,								320	6.3
Norfolk,								74	5.4
Plymouth,	•.				•			69	6.8
Suffolk,								429	6.3
Worcester,		•			•	•	•	214	6.4



# (TABLES)

### XXIXth

# ANNUAL REPORT

OF

# BIRTHS, MARRIAGES, AND DEATHS,

REGISTERED IN

MASSACHUSETTS,

FOR THE YEAR ENDING DECEMBER 31, 1870.

### TABLE I.—POPULATION, 1870.—BIRTHS,

General Abstract, exhibiting, in connection with the Population and Deaths registered in each County and Town in Massachusetts Children Born, the Nativity of Persons Married, and the Sex and

_	Population.	İ			В	irths.				
THE STATE,	United States Census,	No.		Sex.			PAI	RENTAGE	L.	
COUNTIES.	1870.	Whole	М	F.	Unk.	Am.	For.	Am Fa. and For M.	and	σ.
MASSACHUSETTS, .	1,457,351	38,259	<b>19,</b> 803	18,434	22	15,563	18,339	1,787	2,256	314
BARNSTABLE,	32,774	669	338	331	_	510	96	29	33	1
BERKSHIRE, .	64,827	1,616	851	764	1	709	723	61	106	17
Bristol, .	102,886	2,682	1,395	1,284	3	1,210	1,230	100	126	16
Dukes,	3,787	51	20	31	_	43	4	2	2	_
Essex,	200,843	4,772	2,433	2,330	9	2,333	1,924	245	251	19
FRANKLIN, .	32,635	644	319	324	1	421	183	12	22	6
Hampden, .	78,409	1,969	1,030	939	_	834	962	86	75	12
Hampshire, .	44,388	1,019	541	478	_	508	438	33	40	_
MIDDLESEX, .	274,353	7,444	3,884	3,560	_	2,737	3,838	355	473	41
Nantucket,.	4,123	48	25	23	_	<b>3</b> 8	1	3	5	1
Norfolk, .	89,443	2,256	1,145	1,109	2	945	1,030	123	150	8
PLYMOUTH, .	65,365	1,463	788	675	_	990	366	46	42	19
Suffolk, .	270,802	8,614	4,442	4,172	-	2,324	4,925	518	700	147
Worcester,	192,716	5,012	2,592	2,414	6	1,961	2,619	174	231	27

#### MARRIAGES, AND DEATHS, 1870.

according to the United States Census of 1870, the Births, Marriages, during the year 1870,—distinguishing the Sex and the Parentage of aggregate and average Ages of the number who Died.

		MABR	IAGES.						DEA'	гн <b>з.</b>		
			NATIVIT	Y.		a		SEX.		hose are ered.	AG	8.
Couples.	Am.	For.	Am M. and For.Fe.	For. M. and Am.Fe.	Unk.	Persons.	м.	F.	U.	No whose ages are registered.	Agg'te.	Average.
14,721	8,360	4,271	901	1,174	15	27,329	13,699	13,598	32	27,091	. 819,574	30-25
283	248	18	13	4	_	476	244	232	-	443	18,768	41.89
<b>5</b> 23	304	143	22	51	8	996	537	456	3	978	32,983	33.72
917	<b>6</b> 06	198	44	67	2	1,862	929	929	4	1,846	63,385	34.34
32	26	2	4	-	-	70	33	37	_	70	3,300	47.14
2,086	1340	479	140	123	4	3,496	1,759	1,731	6	3,393	104,932	30.93
231	172	35	4	20	_ :	554	<b>26</b> 0	293	1	<b>54</b> 8	21,739	39-67
847	474	271	49	53	-	1,499	757	742	_	1,493	42,806	28.67
434	   260	124	19	29	2	760	366	393	1	757	26,807	35-41
2,714	1467	798	190	258	1	5,169	2,499	2,667	3	5,145	148,967	28 95
32	: 27	' , –	_	5	_	93	49	44	-	92	4,595	49-95
698	451	151	40	55	1	1,399	681	712	3	1,388	47,128	33·9 <b>5</b>
<b>5</b> 35	∖ 5. <b>45</b> 3	58	111	13	-	1,062	535	523	4	1,059	43,355	40.94
3,535	; 5 <b>143</b> 3	1462	285	355	_	6,428	3,267	3,160	1	6,425	<b>157,5</b> 80	24.53
1,854	1099	532	80	141	2	3,465	· ·	<b>1,6</b> 79	1	3,454	103,229	29.89

Table I.—Births, Marriages, and Deaths,

	Population.				1	BIRTH	8.			
Counties and Towns.	United States Census.	, %		SEX			I	ARENTA	GM.	
	1870.	Whole	M.	F.	U.	Am.	For.	and	For.Fa. and Am M.	Unk.
BARNSTABLE,	32,774	669	338	331	-	510	96	29	83	1
Barnstable, .	4,793	60	27	33	-	51	3	1	4	1
Brewster,	1,259	24	16	8	-	19	2	2	1	_
Chatham,	2,411	62	30	32	-	60	-	1	1	-
Dennis,	3,269	74	40	34	-	67	2	2	3	-
Eastham,	668	12	8	4	-	11	1	-	-	-
Falmouth,	2,237	41	19	22	-	32	8	1	-	-
Harwich,	3,080	75	41	34	-	68	2	2	3	_
Mashpee,*.	318	4	2	2	_	4	-	-	- 1	_
Orleans,	1,323	22	9	13	-	19	2	-	1	-
Provincetown, .	3,865	110	53	57	_	32	60	8	10	_
Sandwich,	3,694	67	33	34	_	45	11	5	6	_
Truro,	1,269	29	13	16	_	24	2	2	1	-
317 - 110 4	2,135	49	28	26	_	43	2	2	2	_
Yarmouth,	2,423	40	24	16	-	85	1	8	1	-
Berkshire, .	64,827	1,616	851	764	1	709	723	61	106	17
Adams,	12,090	345	168	177	_	123	175	12	81	4
410 1	430	11	5	6	_	9	2		_	_
D 1 4	1,346	35	15	20	_	19	12	1	2	1
	1,758	34	12	22	_	10	22	2	_	_
Cheshire,	686	8	3	5	_	3	3		2	_
Clarksburg, .		25	13	12	_	7	16	1	1	
Dalton,	1,252	16	8	8	_	12	10	2	i	1
Egremont, .	931				-	9	33	2		-
Florida,	1,322	44	27	17	-		29	4	3	8
Gt. Barrington, .	4,320	91	53	38	-	52				9
Hancock,	882	12	7	5	-	4	6	_	2	_
Hinsdale,	1,695	53	26	27	-	15	38	_	-	-
Lanesborough, .	1,393	48	24	24	-	22	20		6	_
Lee,	3,866	94	49	45	-	44	87	4	9	-
Lenox,	1,965	56	36	20	-	21	27	2	5	1
Monterey,	653	12	5	7	-	11	-	1	- 1	_
Mt. Washington,	256	1	-	1	-	1	-	-	-	-
New Ashford, .	208	8	1	2	_	2	-	1	-	-
N. Marlborough,	1,855	54	36	18	_	30	20	1	3	_
Otis,	960	10	7	3	_	8	• 2	-	- 1	-
Peru,	455	10	5	5	_	8	2	-	-	-
Pittsfield,	11,112	316	177	138	1	113	158	15	80	_
Richmond, .	1,091	18	7	11	_	6	11	1	_	_
0	1,482	12	3	9	_	11		_	_	1
Saroy,	861	19	9	10	_	17	2	_	_	_
OL COLIS	2,535	72	41	31		37	29	1	5	_
	2,003	40	24	16	_	20	14	i	3	2
Stockbridge,	557	9	7	2	_	5	8	i	_	_
Tyringham, .		9	6	3	_	5	2	2	_	_
Washington,	694		29	38	-	23	39	3	2	_
W Stockbridge,	1,924	67			_			4	1	8
Williamstown, .	3,559	78	39	39	_	49	21	4		1
Windsor,	686	14	9	5		13				

<sup>\*</sup> Incorporated, May 28, 1870.

# registered during the year 1870—Continued.

		MARE	IAGES.						DEA'	гня.		
#			Nativit			á		SEX.		No whose ages are registered.	A	gs.
Coupler	Am.	For.	Am. M and For.Fe.	For. M. and Am. Fe.	Unk.	Persons.	M.	F.	Unk	No N	Agg'te.	Average.
283	248	18	13	4	-	476	244	232	-	448	18,768	41.89
30	29	-	1	1	-	66	34	32	_	66	3,119	47.25
13	11	1	1	_	-	23	14	9	-	22	959	43.59
23	23	-	-	-	-	25	10	15	-	25	1,277	51.08
33	31	2	_	_	-	55	28	27	-	54	1,872	34 66
6	6	-	_	-	-	7	4	3	-	7	357	51.00
16	15	1	_	- :	-	32	12	20	-	80	1,404	46.80
46	45	-	-	1	-	41	23	18	-	41	1,544	37.66
1	1	-	-	-	-	8	1	7	-	8	294	36.50
. 9	9		-	_	-	28	13	15	_	27	1,087	40 26
41	19	14	6	2	-	53	28	25	-	53	1,394	26.30
24	21	-	2	1	-	59	38	21	-	57	2,372	41.60
11	8	-	3	-	-	17	9	8	-	17	574	33 76
11	11	-	- 1	-	-	82	18	19	-	31	1,246	40.19
19	19	_	-	_	-	80	17	13	-	80	1,269	42.30
523	<b>304</b>	148	22	51	3	996	537	456	3	978	<b>32,9</b> 83	33.72
134	48	61	9	15	1	217	103	114	· -	214	4,999	<b>2</b> 3·5 <b>5</b>
2	2	-	-	- 1	-	13	12	1	-	13	<b>52</b> 0	40.00
9	7	-	1	1	-	16	7	9	-	16	409	25.50
9	5	2	1	1	-	10	4	6	-	8	317	39.62
1	1	- 1	-	-	-	2	1	1	-	2	158	79.00
12	12	-	-	-	-	21	14	7	-	19	763	40.16
5	4	1	-	-	- 1	12	6	6	-	12	611	50.91
3	2	1	1	=	-	21	13	8	-	21	679	32.33
38	23	11	1	8	-	75	37	38	-	75	2,420	32.26
1	1		2	$\bar{i}$	-	8	4	4	-	8	371	46.37
22 11	8	11 3		2	-	40	24	16	-	40	1,420	35.50
39	22	9	1	6	1	19 66	9   42	10 24	-	19 64	739	38 89 33·17
9	8	•		1		80	13	16	ī	30	2,123 773	25.76
6	6		-	- 1	-	9	4	5		9	462	51 38
•	_		-	=	-	4	3	i	_	3	104	34.66
1	_	1	-	-1	_	2	ı	l il	_	2	152	76 00
4	4		_	_	_	80	18	12	_	29	1,135	39.14
8	7	_	_	1	_	12	8	4	_	12	344	28.66
5	4	_	-	ī	_	9	6	3	_	9	352	39.11
108	49	39	6	13	1	172	94	77	1	167	5,402	82.85
5	3	1	-	1	_	18	8	10	_	18	719	39.94
15	11	1	1	2	-	13	9	4	_	13	585	45.00
7	6	· _	-	1	-	16	9	7	_	16	798	49.87
11	11	-	- 1	- 1	- 11	46	25	21	_	45	2,188	48-68
21	19	-	-	2	-	24	14	10	-	24	976	40.67
7	7	-	- 1	-	-	8	4	4	-	8	488	61.00
1	1	-	-	- ]	- []	8	6	2	-	8	413	51.62
2	2	- [	-	-	-	38	21	17	-	37	1,187	<b>32.08</b>
18	18	-	-	-	- 11	32	14	17	1	32	1,184	37.00
9	7	2			-	5	4	1	-	5	193	38.60

TABLE I.—Births, Marriages, and Deaths,

		Population.				1	BIRTH	8.			
Counties and Town	15.	United States Census.	No.		SEX.			P	ARENTA	GB.	
		1870.	W hole	M.	F.	v.	Am.	For.	and	For Fa. and Am. M.	Unk.
Bristol,		102,886	2,682	1395	1284	3	1210	1230	100	126	16
Acushnet, .		1,132	22	10	12	-	21	_	1	_	_
Attleborough,	•	6,769	282	134	147	1	162	93	10	15	2
Berkley, .	•	744	7	4	3	-	7	-	-	-	-
Dartmouth,	٠	3,367	68	30	38	-	59	5	2	1	1
Dighton, .	•	1,817	49	24	25	-	35	9	1	3	1
Easton, .	٠	3,668	99	54	45	-	42	<b>5</b> 0	6	1	-
Fairhaven,	•	2,626	42	26	16	-	36	3	1	1	1
Fall River,	•	26,766	853	443	409	1	182	592	28	46	5
Freetown, .	•	1,372	16	8	8	-	16	_	_	-	-
Mansfield, .	•	2,432	64	83	31	-	43	13	3	5	=
New Bedford,	•	21,320	459	285	224	-	253	155	18	27	6
Norton,	•	1,821	34	21	13	-	20		8	1	-
Raynham, .	٠	1,713	81	15	16	-	20	7	8	1	-
Rehoboth, .	•	1,895	23	16	7	_	18	1	2	2	-
Seekonk, .	•	1,021	8	6	2	-	6	- 01	1	1	-
Somerset, .	•	1,776 1,294	60 24	29	31	-	38	21	-	1	-
Swanzey, . Taunton, .	•	18,629	491	14	10	-	21	070	2	1	-
Westport, .	•	2,724	50	268	223	1	183	270	18	20	-
westport, .	•	2,121	30	<b>2</b> 5	24	1	48	1	1	_	-
Dukes, .		3,787	51	20	31	_	43	4	2	2	-
Chilmark		476	8	2	6	_	8	_	_	_	_
Edgartown,		1,516	17	4	13	_	14	2	1	_	_
Gay Head,*		160	7	4	3	_	7	_	_		-
Gosnold, .		99	2	1	1		_	_	_	2	_
Tisbury, .	•	1,536	17	9	8	-	14	2	1	-	-
Essex, .		200,843	4,772	2433	2330	9	2333	1924	245	251	19
Amesbury,		5,581	157	89	68	_	61	84	3	7	2
Andover, .	•	4,873	102	50	52	_	34	61	4	2	î
Beverly, .	:	6,507	168	85	83		115	32	11	10	_
Boxford,		847	5	2	3		3	1	i	10	_
Bradford, .		2,014	45	24	21	_	29	14	i	1	_
Danvers, .		5,600	150	85	65	-	74	57	12	Ĝ	1
Essex, .		1,614	30	18	12	_	23	4		ĭ	2
Georgetown,		2,088	42	16	26	_	25	12	2	3	_
Gloucester,		15,389	582	282	295	5	254	228	59	41	_
Groveland,		1,776	44	18	26	_	28	14		2	_
Hamilton, .		790	15	8	7	_	14	ī	_	-	_
Haverbill, .		13,092	293	156	136	1	177	84	13	17	2
Ipswich, .		3,720	62	27	34	1	39		4	i	2
Lawrence,.		28,921	735	364	371	_	146	521	25	43	_
Lynn, Lynnfield, .		28,233	733	382	349	2	396	264	80	38	5

\* Incorporated, April 30, 1870.

registered during the year 1870—Continued.

<del></del>	)	ARR	AGES.						DEA	TH8.		
i i		-	Nativit			ä		SEX.		whose s are tered.	AG	<b>E.</b>
Couples.	Am.	For.	and	For. M. and Am Fe.	Unk.	Persons.	м.	F.	Unk	No. whose ages are registered.	Agg'te.	Average.
917	606	198	44	67	2	1,862	929	929	4	1,846	<b>63,</b> 385	34·3 <b>4</b>
10	8	-	-	2	-	24	16	8	-	22	1,207	54.86
58	34	13	4	7	-	145	62	83	-	145	4,945	
6	6	1	-	-	-	11	9	$\begin{array}{c c} 2\\22 \end{array}$	_	11 63	390 <b>2,</b> 759	
26 22	25 20	1	-	ī	_	63 24	41 7	16	1	23	2,759 882	
22 21	19	1	_			41	22	19		41	1,428	
19	19	_	-	-	-	53	29	24	-	51	2,292	
224	93	96	18	17	_	558		271	_	553	15,151	
10	9	80	10	i		12	8	4	_	12	528	
15	11	2		2	_	29	16	13	_	29	995	
251	166	60	8	17		379	167	212	_	375	13,150	
11	10	1		*:		20		9	_	20	1,264	
17	14	_	2	1	_	26		15	_	26	1,110	42.69
ii	9	_	ī	l î	_ :	18	12	6	_	18	958	
3	3	_	_	_	_	14	-6	8	_	14	692	
12	12	_	_	_	l _ i	27	14	13	_	27	1,193	
10	9	_	_	1	_	18	5	13	_	18	1,056	
176	125	24	11	14	2	368	182	183	3	367	11,816	
15	14			ī	_	82	24	8	_	31	1,569	
											_,	
32	26	2	4	-	-	70	83	37	-	70	<b>3,3</b> 00	47.14
3	2	_	1	_	_	6	2	4	_	6	383	63.83
17	15	1	1	-	-	22	9	13	-	22	1,108	
1	1	_	-	-	-	2	_	2	-	2	41	
1	1	_	-	-	-	3	8	-	-	3	96	
10	7	1	2	-	-	37	19	18	-	37	1,672	45.19
2,086	1340	479	140	128	4	3,496	1759	1781	6	8,393	104,932	30.98
41	26	11	1	3	_	80	47	33	_	78	2,288	29.32
30	20	8	-	2	_	77	40	37	_	77	2,890	
62	53	$\tilde{2}$	5	2	_	96	84	62	_	96	3,588	
5	5	_	_	_	_	10	6	4	_	9	503	
ğ	6	3	_	_	_	29	10	19	_	29	731	25-21
48	29	11	2	5	1	87	42	44	1	87	2,637	30.31
12	10		2	_	_	20	11	9	_	20	1,105	
13	11	2	-	-	_	18	12	6	_	18	741	41.17
209	97	74	27	10	1	357	283	124	-	266	7,119	
15	12	1	1	1	-	28		16	_	26	825	31.73
8	8	_	-	-	-	13	7	6	_	13	757	58.28
158	123	18	11	6	-	204	103	98	3	204	6,520	
31	26	4	-	1	-	68	82	36	-	68	3,214	
<b>3</b> 84	143	186	22	33	-	498	239	259	-	498	9,973	
355	254	50	30	19	2	486	236	249	1	486	12,630	
6	5	1	-	-	-	14	8	6	-	14	<b>4</b> 55	82.50
						L						

TABLE I.—Births, Marriages, and Deaths,

	Population.				3	IRTH	B. ·			
Counties and Towns.	United States Census,	, N		SEX.			1	PARKYTA	GE.	
	1870.	Whole	M.	F.	v.	Am	For.	Am.Fa. and For. M.	For.Fa. and Am. M.	Vak.
Essex-Con.	1		Ī	ī		1	l	ĺ		Ī
Manchester, .	1,665	48	24	24	-	29	7	11	1	-
Marblehead, .	7,703	201	100	101	-	143	41	7	9	1
Methuen,	2,959	65	33	32	-	40	19	2	4	-
Middleton, .	1,010	18	6	7	-	10	3	-	-	-
Nahant,	475	14	5	9	-	8	6	-	-	-
Newbury,	1,430	81	18	13	-	27	2		.!	1
Newburyport,	12,595	323	176	147	-	155	137	15	15	-
North Andover,	2,549	62	37	25	-	19	37	5	1	-
Peabody,	7,343	222	115	107	-	74	125	8	15	1
Rockport,	3,904	110 21	48	62 15	=	67 19	24 2	11	7	1
Rowley,	1,157	21 227	110	117	_	134	64	16	12	ī
Salem,	24,117	90	51	39		59	27	10	3	T
Salisbury,	3,776	40	19	21	-	30	4	2	4	_
Saugus,	2,247 1,846	51	24	27	_	38	12	_	1	_
Swampscott, . Topsfield,	1,213	19	14	5	_	19	12	_		_
Workers	985	17	8	9	_	14	2	_	1	_
Wenham, West Newbury, .	2,006	87	22	15	_	18	14	2	3	_
west newbury,.	2,000	01	22	10	_	10	1=	_	3	_
FRANKLIN, .	82,635	644	319	324	1	421	183	12	22	6
Ashfield,	1,180	20	5	15	_	19	1	-	_	_
Bernardston, .	961	24	12	12	-	22	1	-	1	_
Buckland,	1,946	58	28	80	_	13	41	-	4	-
Charlemont, .	1,005	15	8	7	-	14	-	-	1	-
Coleraine,	1,742	34	19	15	-	25	5	1	8	_
Conway,	1,460	34	17	17	-	26	4	2	2	-
Deerfield,	3,632	108	56	52	-	37	64	1	4	2
Erving,	579	12	4	8	-	11	1	-	_	-
Gill,	653	6	4	2	-	5	-	-	_	1
Greenfield, .	3,589	74	33	41	-	48	18	5	3	-
Hawley,	672 613	18	11	7	_	15	1	_	2	-
Heath, Leverett,	877	9 10	5 8	4 2	1	6 9	1		1	1
<b>-</b> , '	518	9	4	5	-	5	3	=	- 1	_
	201	2	1	1	_	2		_		-
Monroe,	2,224	42	20	22	_	26	15	_	_	ī
Montague, New Salem,	987	13	7	6	_	13	10	_		
N	1.720	23	111	11	1	13	9	_	_	1
	2,091	43	18	25		41	1	1		
Orange, Rowe,	581	12	6	6	_	12			-	-
Shelburne,	1,582	24	10	14	=	19	4	ī	_	_
Shatashamir	614	7	3	4		5	1	i		-
Sunderland, .	832	9	6	3	_	6	3	1		-
Warwick,	769	15	8	7	=	11	4	-	-	
Wendell,	589	6	3	3	-	5	i	_	_	! -
Whately,	1,068	17	12	5	_	13	4	_	-	
,,	1 2,000						1 3			

# registered during the year 1870—Continued.

	1	MARB	iages.		•				DEAT	ня.		
1			Nativit	T.		a		SEX.		hose are	A	ie.
Couples	Am.	For.	Am. M. and For.Fe.	For. M. and Am. Fe	Unk.	Persons	M.	F.	Unk.	No whose ages are registered.	Agg'te.	Average.
17	12	4	1	_	_	16	11	5	_	16	514	32.12
94	70	9	10	5	-	147	84	63	-	146	4,216	28.88
29	24	4	-	1	-	34	16	18	-	34 17	1,341 471	39·44 27·71
12 3	8	2	1	1	-	17	8	9	_	6	147	24.50
9	9	_	_		=	26	14	12	_	26	984	37.85
127	114	4	2	7	_	230	109	121	_	229	7,754	33.86
18	13	2	2	i	_	48	25	23	-	48	2,105	43.85
44	36	4	2	2	_	101	49	52	_	101	2,884	28.85
54	32	14	6	2	-	76	33	43	-	75	2,807	37.48
6	6	-	-	_	-	24	13	11	-	23	1,261	54.88
203	115	57	12	19	-	497	239	257	1	494	16,754	33.91
37	31	8	2	1	•	68	33	85	-	68	2,539	37 34
13	10	2	-	1	-	31 32	12 12	19 20	-	81 82	972 1,562	31·35 48·81
13 2	12 2	1	_	_	=	14	5	9	_	14	715	51.07
4	3	_	_	ī		21	ğ	12	_	21	957	45.57
15	12	2	ī	_	_	23	12	iī	_	28	973	42.30
			-									
231	172	35	4	20	_	554	260	293	1	<b>54</b> 8	21,739	3,9.67
14	13	_	_	1	_	13	6	7	_	13	658	50.61
11	10	-	1	_	-	10	4	6	_	10	486	48.60
18	11	4	-	8	- -	32	18	14	-	32	964	30.12
8	8	-	-	ī	-	17 26	9	8 15	_	17 26	517 1,128	30·41 43·38
18 14	11 8	3	1 1	2	_	27	10	17	_	27	1,308	48.44
14	6	4	-	4	_	54	28	31	_	54	1,920	35·55
4	3	Ī	-	1 -	_	10	4	8	_	10	202	20 20
3	3	-	_	_	_	10	5	5	_	10	665	66.50
41	22	15	1	8	-	75	40	35	_	74	1,921	25.96
8	3	-	_	-	-	12	6	6	-	12	441	36.75
4	4	-	-	-	-	8	-	2	1	8	140	46.66
3	3	-	_	-	_	9	5	4	_	9	566	62 59
8	3	-		-	-	6	5	1 8	-	6 4	184 160	22 33 40 00
2 15	9	5	-	ī	<u>-</u>	59	27	82	_	57	2,108	38.89
10 4	4	"	_	1		8	4	4		8	388	48.50
8	6	1	_	1	_	22	11	11	_	22	1,214	55.18
4	4	1 -	_	-	_	89	18	21	_	39	1,574	40.86
4	4	-	_	_		8	1	7	-	8	473	59.12
12	9	1	_	2	-	28	10	18	-	28	1,196	42.71
3	2	-	-	1	-	10	8	2	-	9	513	57.00
7	7	_	-	-	-	17	5	12	-	16	706	44.12
7	7	-	-	-	-	14	6	8	. –	14	778 411	55·57 84·25
7 5	5 5	1	-	1	-	13 28	6 17	7	_	12 28	1,173	41.89
		_	_			⊔ ∡0	1 11	1 11	. –	1 20	1 1,110	AT 00

Table I.—Births, Marriages, and Deaths,

	Population.	ļ			1	BIRTH	8.			
Counties and Towns.	United States Census.	No.		SEX.			1	PARENTA	GE.	
	1870.	Whole No.	м.	F.	υ.	Am.	For.	Am.Fa. and For. M.	For Fa- and Am. M	Unk.
Hampden, .	78,409	1,969	1080	939	-	834	962	86	75	12
Agawam,	2,001	56	27	29	-	16	33	5	2	-
Blandford, .	1,026	21	8	18	-	19	2	-	-	-
Brimfield,	1,288	27	9	18	-	16	5	4	2	-
Chester,	1,253	17	12	5	-	15	1	1	-	-
Chicopee,	9,607	198		102	-	64	118	9	5	2
Granville,	1,293	14	5	9	-	11	3	-	] -	-
Holland,	344	9	6	8	-	9		-	l	-
Holyoke,	10,733	329		154	-	92	210	13	14	-
Longmeadow, .	1,342	28	15		-	13	15	-	-	-
Ludlow,	1,136	20	9		-	11	8	1	-	=
Monson,	3,204	58	39			38	18	-	-	2
(St. Almshouse,)	318	14	7	7	-	4	7	1	-	2
Montgomery, .		8 93	6		-	6	-	2	_	2
Palmer,	8,631 635	24	45		-	32	59	3	-	_
Russell,	1,100	27	14		1	13 24	8 2	1	-	-
Southwick, .	26,703	756		348	-	300	376	37	39	4
Springfield, . Tolland,	509	13	1 6		I	10	2	1	99	*
Wales,	831	13	5	8	_	10	3	1 1	_	_
Westfield,	6.519	151	79	1 -	-	87	50	3	11	_
W. Springfield, .	2,606	55	21	34	-	18	31	5	î	I
Wilbraham, .	2,330	38	24		-	26	11	-	i	_
Hampshire, .	44,388	1,019	541	478	_	508	438	33	40	_
	4,035	1					1			ł
Amherst,		85	50		-	57	20	3	5	-
Belchertown,	2,428 811	47 21	22   11		-	18	5	1	3	i -
Chesterfield, .	1.037	14	8	10	-	11	ī	-	2	-
Cummington, .	3,620	88	48		=	32	48	4	4	-
Easthampton, . Enfield,	1,023	21	8		-	14	7	-	-	-
Goshen,	368	6	3		_	6	-	_	-	_
Granby,	863	20	7			14	6		_	1 =
Greenwich,	665	8	3		_	8	-		_	_
Hadley,	2,301	53	20		_	21	32	_	_	_
Hatfield,	1,594	64	30		_	19	40	2	3	
Huntington, .	1,156	18	11		_	lii	6	-	lĭ	_
Middlefield, .	728	13	8		_	7	5	_	î	_
Northampton, .	10,160	268		110	_	106	141	8	18	_
Pelham,	673	9	4		_	9	-	-	_	-
Plainfield,	521	12	6		-	12	-	-	-	<b>I</b> -
Prescott,	541	6	9		_	6	-	_	-	-
South Hadley, .	2,840	84	50	34	-	30	44	7	3	I -
Southampton, .	1,159	22	13		-	16	5	-	1	-
Ware, Westhampton, .	4,259	94	47	47	-	34	53	6	1	-
	587	18	a	15	1	10	7		1	

# registered during the year 1870—Continued.

Start		1	MARR	IAGES.					]	DEAT			
847         474         271         49         58         -         1,499         757         742         -         1493         42,806         28-4           10         8         1         1         -         -         16         7         9         -         16         783         48-1           7         7         -         -         -         -         18         7         9         -         16         783         48-1           7         7         -         -         -         -         10         4         6         -         10         321         38-1           119         62         38         8         11         -         177         91         86         -         177         5,519         31:           10         8         2         -         -         -         16         8         8         -         177         5,519         31:           10         8         2         -         -         -         16         8         8         -         177         5,519         31:           15         9         8         10         <				Nativit	T.		ž		SEX.		rhose are ered.	A	or.
10         8         1         1         -         -         23         12         11         -         23         914         89-7         7         7         -         -         -         -         16         7         9         -         16         783         48-1         7         7         -         -         -         -         16         7         9         -         16         783         48-1         7         7         -         -         -         -         10         4         6         -         10         82         13         15         -         28         1,387         48-1         1         10         8         8         -         15         950         35-1         35-2         22         -         -         -         -         16         8         8         -         15         950         35-5         50-5         17-1         1,079         39-1         14         14         -         -         -         -         -         7         353         50-1         17-1         1,079         39-1         19         15         -         -         -         1         1,079	Coup	Am.	For.	and	and	Unk.	Perso	М.	F.	Unk.	No. w	Agg'te.	Average.
7	847	474	271	49	53	-	1,499	757	742	-	1493	42,806	28.67
7         7         -         -         -         -         -         10         4         6         -         10         321         387         488           119         62         38         8         11         -         177         91         86         -         177         5,519         31:           10         8         2         -         -         -         16         8         8         -         15         950         63:           2         2         -         -         -         -         16         8         8         -         15         950         63:           156         49         88         10         9         -         292         189         153         -         292         50,55         17*           14         14         -         -         -         -         12         6         6         -         12         633         52*           26         18         2         4         2         -         49         29         20         -         48         1,674         34*           1         1         -			1	1	-	-				-			39-74
8         7         1         -         -         -         10         4         6         -         10         321         32-1           10         8         2         -         -         -         16         8         8         -         15         950         63:           2         2         -         -         -         -         7         4         3         -         7         353         50-           156         49         88         10         9         -         292         139         153         -         292         5,055         17-7         363         50-           19         15         -         4         -         -         12         6         6         -         12         633         52-           26         18         2         4         2         -         49         29         20         -         48         1,674         36         505         14-1           1         1         -         -         -         -         9         6         3         -         9         851         39-           4			-	-	-	-				-			48.94
119       62       38       8       11       -       177       91       86       -       175       5,519       81:2         2       2       -       -       -       -       16       8       8       -       175       950       650         156       49       88       10       9       -       292       139       153       -       292       5,055       17:1         14       14       -       -       -       -       27       12       15       -       292       5,055       17:1       1,079       36:3       59:2       16:3       38:3       59:2       16:3       38:3       59:2       17:4       14:1       -       -       -       -       12:6       6:3       59:3       18:4       18:4       19:4       18:4       19:4       18:4       19:4       18:4       18:4       19:4       18:4       18:4       19:4       18:4 <td></td> <td></td> <td>-</td> <td>-</td> <td>_</td> <td>  -  </td> <td></td> <td></td> <td></td> <td>l .</td> <td></td> <td></td> <td>48.82</td>			-	-	_	-				l .			48.82
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2       2       2       -       -       -       -       292       139       153       -       292       5,055       15079       189       14       14       -       -       -       -       297       12       15       -       27       1,079       389       19       15       -       4       -       -       12       6       6       -       12       633       522       26       18       2       4       2       -       49       29       20       -       48       1,674       344       1       1       -       -       -       -       -       36       20        16       -       36       505       184       1       1       -       -       -       -       98       6       3       -       9       851       189       189       180       56       27       23       4       2       -       77       42       35       -       76       2,298       30       4       3       1        -       -       14       5       9       -       13       420       32       2       -       4       12       2       -				-	1.					1			
14       14       -       -       -       -       12       15       -       27       1,079       89:1         26       18       2       4       2       -       49       29       20       -       48       1,674       34:1         -       -       -       -       -       -       -       -       -       48       1,674       34:1         1       1       -       -       -       -       -       -       -       -       -       -       48       1,674       34:1         1       1       -       -       -       -       -       9       6       3       -       9       851       89:1         56       27       23       4       2       -       174       5       9       -       13       420       329:2       88       8       -       -       -       14       5       9       -       13       420       329:39:39:39:39:39:39:39:39:39:39:39:39:39			=	_	- 1	_				1			
19	156	49	88	10	9	_	292	139		_	292	5,055	17.31
26         18         2         4         2         -         49         29         20         -         48         1,674         34-1           -         -         -         -         -         -         36         505         14-1           1         1         -         -         -         -         9         6         3         -         9         6         2,298         30-1           56         27         23         4         2         -         774         42         55         -         76         2,298         30-1           8         8         -         -         -         -         10         5         5         -         10         397         39-1           295         158         102         15         20         -         494         252         242         -         493         12,789         25-1         5         -         -         -         -         4         2         2         -         4         176         44-8         15         36         316         52-1         176         44-8         15         36         12         176			١ –	-	_	-	1			-			
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56         27         23         4         2         -         77         42         35         -         76         2,298         30-32         8         8         -         -         -         14         5         9         -         13         420         32-3         8         8         -         -         -         -         10         5         5         -         10         387         38-2         25-2         242         -         493         12,789         25-5         5         5         -         -         -         -         4         2         2         -         4         176         44-4         252         242         -         493         12,789         25-5         5         -         -         -         -         -         4         2         2         -         4         176         34         44         171         -         184         4,580         34-1         18         18         18         -         -         -         135         64         71         -         184         49-1         18         18         18         18         -         -         -         12	-	1	_	-	_	_				-			
4       3       1       -       -       -       10       5       5       -       10       397       397         295       158       102       15       20       -       494       252       242       -       493       12,789       25       5       5       5       -       -       -       -       494       252       242       -       493       12,789       25       5       5       -       -       -       4       2       2       -       4       176       44-       24-       2       -       4       176       44-       26-       1       -       -       6       3       3       -       6       316       52-       52-       5       1       -       -       -       134       4,580       34-       1       -       134       4,580       34-       1       -       134       4,580       34-       1       -       1       -       20       1       -       20       1       1       -       20       1       1       -       20       1       1       -       24       10       14       -       24	_		23	4	2	· _	1			_			
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5       5       -       -       -       -       4       2       2       -       4       176       44-6         57       40       8       2       7       -       135       64       71       -       134       4,580       34-15         15       9       5       1       -       -       36       22       14       -       36       1,290       35-12         21       20       -       -       1       -       21       11       10       -       21       1,041       49-14         434       260       124       19       29       2       760       366       398       1       757       26,807       35-18         30       28       1       -       1       -       76       34       42       -       76       2,578       33-18         18       18       -       -       -       -       24       10       14       -       24       881       36-7         7       7       -       -       -       14       7       7       -       14       630       45-14         26 <td></td> <td></td> <td>  -</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td>39.70</td>			-		-					1			39.70
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57       40       8       2       7       -       135       64       71       -       134       4,580       34-1290       35-12			-	l –	-	-	_			-		176	44.00
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21       20       -       -       1       -       21       11       10       -       21       1,041       49-         434       260       124       19       29       2       760       366       398       1       757       26,807       35-         30       28       1       -       1       -       76       34       42       -       76       2,578       38-         18       18       -       -       -       24       10       14       -       24       881       36-         7       7       -       -       -       -       14       7       7       -       14       630       45-         6       5       1       -       -       -       27       13       14       -       27       1,190       44-         26       16       6       2       1       1       59       24       35       -       58       1,473       25-         18       9       2       1       1       -       19       7       12       -       19       835       43-         6       6<		1				-				1			
434 260 124 19 29 2 760 366 393 1 757 26,807 35-30 28 1 - 1 - 76 34 42 - 76 2,578 33-18 18 18 1 - 24 10 14 - 24 881 36-7 7 7 14 630 45-6 5 1 27 13 14 - 27 1,190 44-26 16 6 2 1 1 59 24 35 - 58 1,473 25-18 9 2 1 1 - 19 7 12 - 19 835 43-18 18 9 2 1 1 1 - 19 7 12 - 19 835 43-18 18 12 - 1 13 8 5 - 13 445 34-3 3 3 13 13 8 5 - 13 445 34-3 13 12 - 1 - 44 17 27 - 44 1,838 41-6 5 1 89 20 19 - 39 1,310 33-10 8 1 19 13 8 4 1 13 239 18-18 159 51 81 11 16 - 162 90 72 - 162 5,346 33-18 159 51 81 11 16 - 162 90 72 - 162 5,346 33-18 159 51 81 11 16 - 162 90 72 - 162 5,346 33-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 12 4 8 - 12 516 43-19 1 1 1 12 4 8 - 12 516 43-19 1 1 1			9	1	1	-			1	-			
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30     28     1     -     1     -     76     34     42     -     76     2,578     33:18       7     7     -     -     -     -     24     10     14     -     24     881     36:18       7     7     -     -     -     -     14     7     7     -     14     630     45:19       6     5     1     -     -     -     -     27     13     14     -     27     1,190     44:20       26     16     6     2     1     1     -     19     7     12     -     19     83:43:43     25:43       18     9     2     1     1     -     19     7     12     -     19     83:43:43     83:43:43       6     6     -     -     -     -     7     5     2     -     6     287     47:44       4     4     -     -     -     -     15     6     9     -     15     673     44:53       13     12     -     1     -     -     -     44     17     27     -     44     1,838     41:53    <		1					l	1		1		•	l
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26     16     6     2     1     1     59     24     35     -     58     1,473     25:18       18     9     2     1     1     -     19     7     12     -     19     835     43:18       6     6     -     -     -     -     -     7     5     2     -     6     287     47:47       4     4     -     -     -     -     15     6     9     -     15     673     44:33       3     3     -     -     -     -     13     8     5     -     13     445     34:34       13     12     -     1     -     -     -     44     17     27     -     44     1,838     41:38       4     5     1     -     -     -     -     39     20     19     -     39     1,810     38:41:40       10     8     1     -     1     -     29     15     14     -     28     1,137     40:41       1     1     -     -     -     -     162     90     72     -     162     5,346     33:43			-	-	-	_	11			-			
18     9     2     1     1     -     19     7     12     -     19     835     43:       6     6     -     -     -     -     -     7     5     2     -     6     287     47:       4     4     -     -     -     -     15     6     9     -     15     673     44:       3     3     -     -     -     -     13     8     5     -     13     445     34:       13     12     -     1     -     -     -     44     17     27     -     44     1,838     41:       6     5     1     -     -     -     -     39     20     19     -     39     1,310     33:       10     8     1     -     1     -     29     15     14     -     28     1,137     40:       1     1     -     -     -     -     162     90     72     -     162     5,346     33:       8     8     -     -     -     -     12     4     8     -     12     516     43:       1     1 <td></td> <td></td> <td></td> <td>9</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td>I</td> <td></td> <td></td> <td></td>				9	1	1				I			
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4     4     -     -     -     -     15     6     9     -     15     673     44:33       3     3     -     -     -     -     13     8     5     -     13     44:53     34:53       13     12     -     1     -     -     -     44     17     27     -     44     1,838     41:1       6     5     1     -     -     -     -     39     1,810     33:1       10     8     1     -     -     -     -     29     15     14     -     28     1,137     40:1       1     1     -     -     -     -     13     8     4     1     13     239     18:1       159     51     81     11     16     -     162     90     72     -     162     5,346     33:4       8     8     -     -     -     -     -     12     4     8     -     12     516     43:4       1     1     -     -     -     -     -     5     -     5     257     51:4       25     20     3     1     1 </td <td></td> <td></td> <td>1</td> <td>1</td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td>  _</td> <td></td> <td></td> <td></td>			1	1	_	_				_			
13     12     -     1     -     -     44     17     27     -     44     1,838     41       6     5     1     -     -     -     39     20     19     -     39     1,810     33:       10     8     1     -     1     -     29     15     14     -     28     1,137     40:       1     1     -     -     -     -     182     90     72     -     162     5,346     33:       8     8     -     -     -     -     -     12     4     8     -     12     516     43:       1     1     -     -     -     -     8     4     4     -     8     478     59:       4     4     -     -     -     -     5     -     5     -     5     257     51:       25     20     3     1     1     -     53     20     33     -     53     1,591     30:       7     7     -     -     -     -     22     11     11     -     22     1,112     50:       62     27     25		4	-	_	-	-	15		9	-	15	673	44.87
6     5     1     -     -     -     39     20     19     -     39     1,310     33:       10     8     1     -     1     -     29     15     14     -     28     1,137     40:       1     1     -     -     -     -     18     8     4     1     13     239     18:       159     51     81     11     16     -     162     90     72     -     162     5,346     33:       8     8     -     -     -     -     12     4     8     -     12     516     43:       1     1     -     -     -     -     8     4     4     -     8     478     59:       4     4     -     -     -     -     5     -     5     -     5     257     51:       25     20     3     1     1     -     53     20     33     -     53     1,591     30:       7     7     -     -     -     -     22     11     11     -     22     1,112     50:       62     27     25     2			-	1	-	- 1				-			
10     8     1     -     1     -     29     15     14     -     28     1,137     40-1       1     1     -     -     -     -     18     8     4     1     13     239     18-1       159     51     81     11     16     -     162     90     72     -     162     5,346     33-6       8     8     -     -     -     -     12     4     8     -     12     516     43-6       1     1     -     -     -     -     -     8     478     59-7       4     4     -     -     -     -     5     -     5     -     5     257     51-2       25     20     3     1     1     -     53     20     33     -     53     1,591     30-2       25     27     25     2     7     1     65     36     29     -     65     2,323     35-			i -	1	-	-				-			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			. –	1	-	-				-			
159     51     81     11     16     -     162     90     72     -     162     5,346     33-6       8     8     -     -     -     -     12     4     8     -     12     516     43-6       1     1     -     -     -     -     8     4     4     -     8     478     59-7       4     4     -     -     -     -     5     -     5     -     5     257     51-2       25     20     3     1     1     -     53     20     33     -     53     1,591     30-0       7     7     -     -     -     -     22     11     11     -     22     1,112     50-0       62     27     25     2     7     1     65     36     29     -     65     2,323     35-0			1	-	1							1,137	
8     8     -     -     -     -     12     4     8     -     12     516     43.4       1     1     -     -     -     -     8     4     4     -     8     478     59.5       4     4     -     -     -     -     5     -     5     -     5     257     51.6       25     20     3     1     1     -     53     20     33     -     53     1,591     30.6       7     7     -     -     -     -     22     11     11     -     22     1,112     50.6       62     27     25     2     7     1     65     36     29     -     65     2,323     35.5			81	17	18					1			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			-	**	10					•			
4     4     -     -     -     -     5     -     5     -     5     257     51-2       25     20     3     1     1     -     53     20     33     -     53     1,591     30-4       7     7     -     -     -     -     22     11     11     -     22     1,112     50-4       62     27     25     2     7     1     65     36     29     -     65     2,323     35-4			_	_	_	_		_		1			
25   20   3   1   1   -     53   20   33   -   53   1,591   30-0   30   30   30   30   30   30	4		-	_	_	_	-	-					51.40
<b>62</b>   <b>27</b>   <b>25</b>   <b>2</b>   <b>7</b>   <b>1</b>     <b>65</b>   <b>36</b>   <b>29</b>   <b>-</b>   <b>65</b>   <b>2</b> ,323   <b>35</b>	25		3	1	1	-				-	53		30.02
62   27   25   2   7   1     65   36   29   -   65   2,323   35   2   2   2   -   -   -   11   3   8   -   11   506   46			-	-	-	-				-			
2 2 2 -   -   -   -   11   3   8   -   11   506   486			25	2	7	1				-			35.74
	2	2	-	-	-	-	11	8	8	-	11	506	46.00

TABLE I.—Births, Marriages, and Deaths,

	Danalasta				1	BIRTH	J.	===		=
Counties and Towns.	Population. United States Census,	, K		SEX.			P	ARBUTA	GB.	
	1870.	Whole	¥.	F.	υ.	Am.	For.	Am Fa. and For M.	For.Fa. and Am .M.	Unk.
HAMPS Con.	0.150	00	00	ا ،		10	177	ه ا	1	
Williamsburg, .	2,159 860	36 12	20	16 4	_	16 10	17 1	2	i	_
Worthington, .	800	12	ľ	1	_	10	•	_	•	
MIDDLESEX, .	274,353	7,444	3884	3560	-	2787	3838	855	473	41
Acton,	1,593	28	13		-	17	8	-	-	_
Arlington, .	3,261	88	47	41	-	33	51	1	3	-
Ashby,	994	15	9		-	11	2	1	-	1
Ashland,*	2,186	60	33		-	33	23	1	2	1
Bedford,	849	15	11		-	7	22	1	2	1
Belmont,	1,513	35	22		-	11		1	2	ī
Billerica,	1,833	31	11	20	-	16	11	1	Z	-
Boxborough,	338	105	87	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	-	60	90	8	6	ī
Brighton,	4,967 626	165	6		-	5	4	0	ן י	
Burlington, .	39,634	1,307	698		_	412		78	99	4
Cambridge, .	569		6 6	1	_	6	114	10	1	<b>T</b>
Carlisle, Charlestown, .	28,323	766	391	375	_	814	886	52	63	1
	2,374	60	34	26	_	29	21	5	5	_
Chelmsford,	2,412	58	28		_	13	27	2	5	1
Dracut,	2,078	88	19	14	_	19	19	2	Š	-
T) i 1 .	471	10	6		_	10		_	-	
E-manata '	2,220	25	12	13	_	22	3	_	_	_
Framingham, .	4,968	98	45	53	_	38	48	7	5	_
Groton,	3.584	103	47	56	_	45	46	4	8	_
Holliston,	3,078	75	39		_	38		3	Ĭĭ	١ _
Uambintan	4,419	90	48		_	14	66	_	6	_
Hudson,	3,389	99	50	49	_	33	53	<u> </u>	9	_
Lexington,	2,277	42	24	18	_	15		î	4	_
Lincoln,	791	12	8	4	_	6	6	_	_	_
Littleton,	983	9	8	ī	_	7	i	_	1	_
Lowell,	40,928	924	497	427	_	233	578	45	66	2
Malden	7,367	178	90	88	_	77	80	10	11	_
Mariborough,† .	8,474	411	217	194	_	91	282	11	27	l –
Medford,	5,717	116	69	47	_	61	41	10	3	1
Melrose,	3,414	58	80		_	39	9	8	2	-
Natick,	6,404	241	114	127	_	95	115	7	24	-
Newton,	12,825	293	155	138	_	109			17	2
North Reading, .	942	17	8	9	_	14	3	_	-	-
Pepperell,	1,842	33	16	17	_	21	10	-	1	1
Reading,	2,664	56	27	29	-	37	18		1	3
Sherborn,	1,062	17	11	6	-	11	6	1	-	-
Shirley,	1,451	24	11	13	-	10			1	1
Somerville, .	14,685	528	259		-	195			29	7
Stoneham,	4,513	120	65		-	67	44		4	1
Stow,	1,813	49	31			22			3	1
Sudbury,	2,091	50	24	26	-	21	27	1	1	-
						<u></u>	<u> </u>		1	

<sup>•</sup> Ayer incorporated, Feb. 14, 1871.

<sup>†</sup> Maynard incorporated, April 19, 1871.

BIRTHS, MARRIAGES, AND DEATHS.

1870.]

registered during the year 1870—Continued.

		MARR	iages.	====			=		DEA	тна,		
	<del></del>		NATIVIT	Ţ.		-		SEX.			Aq	E.
Couples.	Am.	For.	Am. M. and For Fe	For. M. and Am.Fe.	Unk.	Persons.	M.	P.	υ.	No whose ages are registered.	Agg'te.	Average.
16	11	3	1	1	- 1	24 19	11 13	13 6	-	24 19	484 678	20·17 35·68
•		_		_								
2,714	1467	798	190	258	1	5,169	2499		8	5,145		28.95
17	14	-	1	2	-	18	11	7	-	18	787	40.94
21	11	5	1	4	-	55	80	25	-	55	1,450	26 36
6	5	1	;	-	-	22	7	15	_	22 36	1,008	45 82 26 92
20	15	3	1	1 1	-	36 13	18 8	18 5	-	13	969 <b>4</b> 82	20.92 37.08
8 9	6 7	1	ī	1	_	24	10	14	_	24	490	20.42
15	9	2	2	2	_	30	15	15	_	80	1,192	39.73
6	. 5			ĺi	_	4	2	2	_	4	236	59.00
55	33	18	2	2	_	88	45	43	_	87	2,522	
8	7	-	ī	-	_	7	4	3	_	7	428	60.43
399	183	144	25	47	_	811	418	393	_	808	19,689	24.37
2	2	_	_	_	_	5	4	1	_	5	212	42-40
842	177	95	35	85	-	594	308	285	1	588	15,089	25.66
21	14	1	4	2	-	50	18	82	-	50	1,609	32.18
28	10	12	-	1	-	38	17	21	-	88	1,290	
9	5	8	-	1	-	81	14	17	-	31	917	29.58
8	3	-	-	-	-	5	2	3	-	5	417	83.40
7	7		-	7	-	29	12 42	16	1	29	757	26.07
52	83	14	1 8	4	_	84 69	83	42 36	-	83 68	8,827 1,948	46·11 28·65
43	21 28	14	0	5 2	_	49	80	19	_	48	1,715	35.73
80 25	13	7	2	3		46	21	25	_	46	1.659	
23 28	21	2	4	1	_	63	24	39	_	63	1,519	24.11
16	9	7	_	_	_	38	ĩi	27	_	38	1,865	49.08
5	2	2	_	1	_	12	7	5	_	12	539	44 92
12	11	_	_	1	_	10	1	9	_	10	407	40.70
524	243	190	42	49	-	952	441	511	-	948	22,720	23.97
55	31	18	2	4	-	117	60	57	-	116	3,010	25.95
80	24	42	5	9	-	168	78	90	-	168	8,163	18.83
54	40	9	2	8	-	86	88	48	-	86	2,856	83.21
85	22	4	5	4	-	47	17	80	-	47	1,863	39.64
60	33	18	6	3	-	106 130	53	53 68	-	106 130	2,937	27·71 38·70
109	57 7	81	8	12 1	1	17	62 7	10	_	16	5,031 802	50.12
8 17	15	-	_	2	_	28	10	18	_	28	1,115	39.82
17	16			í		36	21	15	_	36	1,645	45 69
15	14	_	_	i	_	17	5	12	_	16	959	59.94
6	5	1	_	_	_	33	14		_	33	760	
81	41	22	8	10	_	258	132	126	-	258	6,312	24.47
54	32	13	2	7	-	63	28	35	-	63	2,013	31.95
17	8	6	1	2	-	29	15		-	29	1,016	35.03
12	10	_	2	-	-	26	12	14	-	26	1,075	41.35
- 1	- 1			l		<u>                                     </u>				l		<u> </u>

TABLE I.—Births, Marriages, and Deaths,

			===		=	===				_
	Population.		_		E	IRTH	3.			
Counties and Towns.	United States Census,	No.		SEX.			P	ARRNTA	6B.	
	1870.	Whole	M.	F.	υ.	Am.	For.	and	For.Fa. and Am. M.	Unk.
MIDDL'X—Con.									l	i
Tewksbury, .	1,944	23	9	14	-	14	8		1	-
(St. Almshouse),	1 000	59	31	28	-	12		1	1	8
Townsend,	1,962 629	52 6	27	25	-	36	9	1	6	-
Tyngsborough, . Wakefield, .	4.135	118	58	60 60	_	6 53	56	7	2	-
Waltham.	9,065	299	151	148	_	105	166		16	_
Watertown, .	4,326	104	56	48	_	32	61	3	7	1
Wayland,	1,240	22	14	8	_	15	5	_	2	_
Westford,	1,803	43	19	24	_	20	18	3	1	1
Weston,	1,261	20	10	10	_	10	8	1	-	1
Wilmington, .	866	11	6	5	-	6	5	-	-	-
Winchester, .	2,645	74	40	34	-	30	38		3	-
Woburn,	8,560	264	132	132	-	82	156	8	18	-
NANTUCKET,.	4,123	48	25	23	-	<b>3</b> 8	1	3	5	1
Norfolk, .	89,443	2,256	1145	1109	2	945	1030	123	150	8
Bellingham, .	1,282	29	17	12	_	16	9	4		_
Braintree,	3,948	88	46	42	_	45	34	6	3	_
Brookline,	6,650	200	104	96	_	39	145	7	6	3
Canton,	3,879	77	40	37	_	20	44	4	9	_
Cohasset,	2,130	53	29	24	_	30	19	1	3	-
Dedham,	7,342	203	121	82	-	71	101	11	19	1
Dover,	645 3,057	12 38	9 18	3 20	-	5	7 6	1	2	-
Foxborough, . Franklin,	2,512	42	21	21	_	29 25	14	1	3	_
Hyde Park,	4,136	167	84	83	_	55	84	14	12	2
Medfield,	1,142	19	7	12	_	11	6	î	1	_
Medway,	3,721	93	46	47	_	50	32	6	5	_
Milton,	2,683	53	29	24	_	24	24	5	_	_
Needham,	3,607	104	45	59	-	31	62	4	7	-
Norfolk,*	1,081	81	10	21	-	16	13	1	1	-
Quincy,	7,442	200	102	97	1	90	76	15	18	1
Randolph,	5,642	153	75	77	1	65	60	10	18	-
Sharon, Stoughton,	1,508 4,914	102	14   51	10 51	-	13 48	8 42	2 7	1 5	_
Walpole,	2,137	34	16	18	_	19	10	í	3	ī
West Roxbury,	8,683	228	111		_	78	118	15	17	1
Weymouth, .	9,010	278	138		_	146	109	8	15	
Wrentham, .	2,292	28	12	16	-	19	7	-	2	_
PLYMOUTH, .	65,365	1,463	788	675	_	990	366	46	42	19
Abington,	9,308	231	134	97	_	118	100	4	8	1
Bridgewater, .	3,660	58	33	25	-	30	21		2	î
(St. Almshouse),	-	25	12	13	-	4	13	-	-	8
(St. AIMSROUSE),	-	25	12	13		4	13	-		Ľ

<sup>\*</sup> Incorporated, Feb. 23, 1870.

#### registered during the year 1870—Continued.

		MARI	RIAGES						DEAT	HS.		
les.			NATIVIT			736		SEX.		rhose are tered.	A	oz.
Couples.	<b>≜</b> m.	For.	Am M. and For. Fe	For, M. and Am Fe.	Unk.	Persons	M.	F.	Unk.	No. whose ages are registered.	Agg'te.	Average.
10	8	_	! -	2	_	10	4	6	_	10	441	44.10
_	_	-	-	-	-	246	132	114	-	246	9,308	37 84
19	18	-	=	1	- '	30	14	16	-	30	1,114	
5	8	10	2	7	_	10	5	5	-	10	475	47.50
50 105	29	13	4	4	-	67	34	33	-	125		
125 48	61	45 20	9 5	10	- ,	135	60 31	75 35	1	135 67	3,576 1,984	
17	15	1	-	1		23	11	12	1 -	23	840	
11	9	i	-	î	-	31	15	16	-	30	1,549	
5	5	-	_	1 -	_	10	5	5	-	10	551	
5	4	_	_	1	_	24	11	13	_	24	1,167	
24	15	8	l _	ī	_ :	26	12	14	_	26	758	
69	34	24	4	7	- :	146	60	86	-	144	4,581	
<b>3</b> 2	27	-	-	5	-	93	49	44	-	92	4,595	49-95
698	451	151	40	55	1	1,399	684	712	3	1,388	47,128	33.95
4	3	-	1	-	- 1	18	8	10	_	16	699	43 69
32	24	3	1	4	_	68	83	35	-	68	2,746	40.38
67	23	28	8	7	1	97	45	52	-	94	2,758	29.34
28	10	11	3	4	-	82	34	47	1	80		
13	11	1	1	-	-	27	12	15	-	27	1,127	41.74
<b>5</b> 0	31	10	4	5	-	106	51	55	-	106	3,114	
4	8	1	1 -	-	-	12	4	8	-	12	836	
25	21	1	1	2	-	40	18	22	-	40	1,672	
15	10	2	1	2	-	35	16	18	1	35		
42	24	12	1	5	-	72	39	33	-	72	1,690	
10	20	3	-	1 2	-	22	26	13 26	-	22 52		
24 19	12	3	3	1	1 -	52 34	13	20	-	33		
<b>3</b> 3	23	7	i	2	_	60	39	21	_	60		
11	8	i	2	1 -	<b>!</b>	8	7	1		8		
66	42	15	3	6		133	70	63	_	133		
44	33	6	i	4	1 -	121	59	61	1	120		
6	6	_	1 -	1 -		31	15	16	-	31	1.448	
45	35	8	1 -	2	_	80	43	37	_	80		
19	15	lĭ	1	2	_	27	15	12	_	27	1,495	
54	23	25	3	3	-	101	50	51	_	101		
70	51	11	5	3	_	140	66	74	-	138	4,09	29 65
17	14	3	-	-	-	33	12	21	-	33		50.73
535	453	58	11	13	-	1,062	535	523	4	1,059	43,35	40.94
67	46	15	3	3	_	111	50	58	3	109	3,278	30.07
32	21	10	-	1	-	38	22	16	-	38		
-	-	-	-	-	-	75	45	30	-	75		
	<u> </u>	<u> </u>	<del>'</del>	1	1			<u> </u>		<del></del>	<u> </u>	<u> </u>

TABLE I.—Births, Marriages, and Deaths,

					<u> </u>	BIRTH	9.			==
Counties and Towns.	Population. United States Census,	Νφ	T -	SEX.				PARKNT	GB.	
	1870.	Whole	M.	F.	υ.	Am.	For.	Am Fa. and For. M	For Fa. and Am. M.	Unk.
PLYM'TH-Con.			Ī							
Carver,	1,092	28	12		1	26		2	-	_
Duxbury,	2,341	40	26		1	84			1	-
E. Bridgewater,	3,017	49	28		-	84		1	2	_
Halifax,	619	12	7			12		-	-	-
Hanover,	1,628	32	11			23		1	-	2
Hanson,	1,219	24	12			19		1	1	- 1
Hingham,	4,422 261	94	51		-	55		7	2	1
Hull,	1.604	29	16		_	3   18	8	- 1	2	-
Kingston,	1,159	26	11		_	23	î	1	1	_
Lakeville,	896	20	1 6		_	21	1	i		_
Marion, Marshfield, .	1,659	85	19		_	33	1	i	_	_
Mattapoisett, .	1,361	20	13		_	20		_	_	_
Middleborough,	4,687	82	41		_	69	10	3	_	_
N. Bridgewater,	8,007	243	131		_	135	86	6	15	ī
Pembroke, .	1.447	18	6		_	15	-	i	1	i
Plymouth,	6,238	143	75		-	111	21	5	4	$\hat{2}$
Plympton,	804	9	5		_	9		_		
Rochester,	1.024	13	ě		_	13	_	_	_	_
Scituate,	2,350	60	85		_	44	11	4	1	_
South Scituate, .	1,661	81	16		_	29	ī	_	[	1
Wareham,	3,098	103	60		_	70	29	1	2	ī
W. Bridgewater,	1,803	33	19	14	-	22	11	-	-	-
Suffolk, .	270,802	8,614	4442	4172	_	2824	4925	518	700	147
Boston,	250,526	8,073	1118	3927	_	2050	4740	486	654	143
Chalasa	18,547	508	278		_	256		30	45	1
Revere,*	1,197	20	12		_	10	8	-	1	i
Winthrop,	532	13	6		_	8	1	2		$\hat{2}$
•,										
Worcester,.	192,716	5,012	2592	2414	6	1961	2619	174	231	27
Ashburnham, .	2,172	55	32	23	_	35	14	2	3	1
Athol,	3,517	64	35	29	-	48	10	2	3	ī
Auburn,	1,178	26	9	17	-	14	10	_	1	1
Barre,	2,572	83	15	18	_	26	3	1	3	-
Berlin,	1,016	25	12	13	-	20	5	-	-	-
Blackstone, .	5,421	118	62	55	1	33	65	14	6	-
Bolton,	1,014	16	9	7	-	15	1	-	- 1	_
Boylston,	800	16	8	8	-	13	2	1	-	-
Brookfield, .	2,527	43	24		-	20	20	1	2	-
Charlton,	1,878	36	20		-	28	7	-	1	-
Clinton,	5,429	155	69	86	-	31	104	10	10	-
Dana,	758	14	7	7	-	14		-	-	-
Douglas,	2,182	78	43	35	-	25	45	3	5	-
	<u> </u>	<u> </u>	I	!		<u> </u>			1	

<sup>•</sup> Name changed from North Chelses, 1871.

### registered during the year 1870—Continued.

	1	MARR	iages.						DEA	TH8.		
<u></u>			Nativit	т.		á		SEX.		hose are ered.	AG	B.
Couples	Am.	For.	Am. M. and For Fe.	For. M. and Am. Fe.	Unk.	Persons	M.	F.	Unk.	No. whose ages are registered.	Agg'te.	Average.
8	8	_	-	-	_	35	16		_	85	1,798	50-66
11	10	1	-	-	-	29	15		-	29	1,792	61.79
24	23	1	-	-	-	54	24	80	-	54	. 2,411	44.65
2	2	-	! -	-	-	10		4	-	10	441	44.10
7 11	7 11	-	-	-	-	15 11	6 9	9 2	-	15 11	612 509	40·80 46·27
37	82	3	1	ī	-	75	33	42	_	75	3,396	45.28
2	02	-	i	i		2	1	1	_	2	63	31.50
15	14	_	i	1	<u>-</u> .	33	12		_	33	1,491	45.18
8	8	_	_	_	_	17	8		_	17	804	47.29
5	5	_	_	_	_	21	15		<b>-</b>	21	1,099	
21	21	_	_	_	_	24	18		_	24	1,463	60.96
15	15	_	-	_	_	80	18	12	-	80	1,474	49.13
29	28	_	-	1	-	79	39		-	79	3,236	40.96
86	59	21	1	5	-	128			1	128	3,587	28.02
9	9	-	-	_	-	19	14	5	-	19	954	
60	55	2	2	1	-	108			-	106	4,549	
8	8	-	-	-	-	14		11	-	14	814	
12	12	-	-	-	-	20	10		-	19	1,010	
. 19 12	17 12	1	1	-	-	27 81	14 14	13 17	-	27 31	902	88 41 44·71
12 24	19	4	ī		<b>-</b>	37	23		_	87	1,386 1,150	
11	11	*	1	-	<b>-</b>	21	10		_	21	881	41.95
**	**	_	-		-		10	•	_		001	11 00
3,535	1433	1462	285	855	-	6,428	3267	3160	1	6,425	157,580	24.53
3,340	1328	1409	269	334	_	6,098	8102	2996	_	6,097	149,666	24.55
194	104	53	16	21	_	312	162		-	812	7,389	
1	1	_	_	_	_	12	2	10	-	10	877	37.70
•	-	-	-	-	-	6	1	4	1	6	198	83.00
1,854	1099	532	80	141	2	3,465	1780	1679	6	8,454	103,229	29-89
16	15	_	_	1		40	25	15	_	40	1,088	27-20
38	34	2	_	i	1	80	40		_	80	2,199	27.49
5	1	2	_	2		14	9	5	_	14	670	
14	111	2	_	ī	_	36	17	19	_	. 36	1,576	
15	13	-	_	2	_	16	7	9	_	16	935	
68	20	40	2	5	1	80	36		-	79	2,721	34 44
10	10	_	-	-	_	17	5	12	_	17	647	
6	6	-	-	-	-	21	13		<b>–</b>	21	700	
25	22	8	-	-	-	36	16		<b>-</b>	36	1,407	
15	15	-	-	-	-	30	15		-	80	1,397	
46	17	21	4	4	-	112	47	65	-	111	2,666	
7	7	_	-	;	-	19	9	10	-	19	859	
21	11	9	-	1	-	46	27	19	_	46	1,169	25.41
			<u> </u>		<u> </u>		<u></u>	<u> </u>		1		<u> </u>

TABLE I.—Births, Marriages, and Deaths,

	Population.				1	IRTH	8.			
Counties and Towns.	United States Census,	S S		SEX.			3	PARRYTA	.g.	
	1870.	Whole	M.	R.	v.	Am.	For.	and	For.Fa. and Am. M.	Unk.
Worces'r-Con.			1	1	ļ	1	1			
Dudley,	2,388	69	33	36	_	21	41	1	6	_ ا
Fitchburg,	11,260	303	150	153	_	130	148	11	14	_
Gardner,	3,333	88	45	43	_	42	38	2	6	_
Grafton,	4,594	85	51	84	_	30	46	5	4	_
Hardwick	2.219	46	25	21	_	17	26	· 1	$\hat{2}$	_
Harvard,	1,341	20	4	16	_	lii	9	_	_	_
Holden,	2,062	45	20	25	i -	24	18	1	2	_
Hubbardston.	1,654	80	19	īĭ	_	24	4	_	_	2
Lancaster	1.845	16	11	5	_	10	8	_	_	_
Leicester	2,768	65	33	32	_	20	37	2	6	
Leominster	8.894	101	52	48	1	69	23	2	6	1
Lunenburg, .	1.121	24	13	11	_	21	20	1	U	_
Mendon	1,175	40	13	27	-	28	9	i	1	ī
Milford,	9,890	336	190	146	-	91	224	6	15	l .
Millbury,	4,397	170	87	83	_	87	111	12	9	ī
New Braintree,	640	170	5	4	_	7	2	12		<u> </u>
Northborough, .	1,504	34	16	18	_	21	9	2	2	_
Northbridge, .	3,774	112	64	48		45				-
M Dl.C.l.	3,343	113	62	51	-	39	57 63	4 2	6	-
Oakkam '	860	113	5	7	-			1	8	. 1
O-6-4	2,669	54	82	22	-	8 24	2	3	-	1
Damas	646	6	3	8	-	5	25	-	- 1	2
TD A I	1,335	22	10	12	-	19	-	-		-
DL:III.makam	698	9	5	4	-		1	-	2	-
	1,279	25	11	14	_	8 23	-	1	-	-
Princeton, Royalston,		16	9	7	ı		1	1	-	-
	1,354	22	14	8	-	13	2	1	-	-
Rutland,	1,024				-	15	6	1	-	-
Shrewsbury, .	1,610	85 45	20	15	-	24	8	8	_	-
Southborough, .	2,135		18	27	=	19	22	1	8	-
Southbridge, .	5,208	164	73	91	l .	13	149	1	-	1
Spencer,	8,952	166	79	87	-	29	134	_	-	3
Sterling,	1,670	27	16	11	-	21	4	-	2	-
Sturbridge, .	2,101	38	16	17	-	19	13	1	-	-
Sutton,	2,699	61	31	30	-	33	21	2	4	1
Templeton,	2,802	75	35	40	-	36	37	-	2	-
Upton,	1,989	42	20	22	-	25	15	_	1	1
Uxbridge,	3,058	81	52	29	-	30	42	5	4	-
Warren,	2,625	66	42	24	-	26	82	4	4	-
Webster,	4,763	89	56	33	-	18	66	2	3	-
Westborough, .	3,601	101	49	52	-	44	51	1	5	-
West Boylston, .	2,862	82	34	48	-	29	44	5	4	-
West Brookfield,	1,842	47	27	20	-	19	24	1	3	-
Westminster, .	1,770	29	14	15	-	23	4	2	_	-
Winchendon, .	3,398	86	45	39	2	47	30	-	2	7
Worcester, .	41,105	1,232	638	592	2	382	727	51	70	2

#### registered during the year 1870—Concluded.

	1	MARR	IAGES.						DEAT	HS.		
i			NATIVIT	<b>T</b>	<del></del>	널		SEX.		rhose are ered.	A	3 <b>3</b> .
Couples.	Am.	For.	and For.Fe.	For. M. and Am. Fe.	Unk.	Persona	M.	F.	Unk.	No. whose ages are registered.	Agg'te.	Average.
	ì					İ						
6	5	1	_	-	_	27	10	17	_	27	1,018	37.70
132	91	30	5	6	-	208	109	99	-	208	4,773	22.95
30	19	5	3	3	-	55	26	29	-	55	1,729	31.44
40	23	14	2	1	-	62	27	34	1	62	2,075	33 47
20	10	9	-	1	-	12	5	7	-	12	429	
7	7	-	-	-	-	28	17	11	-	28	1,095	
15	10	2	8	-	-	89	20	19	-	39	1,600	
10	9	-	1	-	-	25	12	13	-	25	956	
12	, 11	1	-	-	-	29	17	12	-	29	1,163	40.10
20	16	2	1	1	-	57	38	19	-	57	2,037	35.74
21	19	1	-	1	-	89	54	35	-	88	8,524	40·05 52·31
9	8	-	-	1	-	16	6	10	-	16 16	837	
9	9	- 00	ī	12	-	16	7	86	-	208	5,099	
80	35	32 21	11		-	208 86	122 42	43	ī	85	2,194	
51 6	14	. 21	1	5	-	7	42	3	1 1	7	332	
8	7	_	_	1	-	24	11	13		22	1,269	
81	15	13	1	2	_	39	20	19		39	1,047	26.85
29	21	5	1 -	3	_	53	25	27	1	53	1,276	
8	8	_	-	_	_	21	10	īi	1	20	1,034	51.70
18	9	4	_	_	_	49	26	23	_	48	1,838	
3	2	î	I _	_	_	9	5	4	_	9	431	47.89
7	7	1	-	_	_	24	10	14	-	24	1.046	1
10	10	_	_	_	_	7	3	4	_	7	414	59.14
īĭ	8	1	_	2	_	25	14	11	_	25	1,102	44.08
15	15	_	_	_	-	23	11	12	_	23	833	
11	11	-	! -	_	-	15	6	9	-	15	797	53.13
11	9	2	-	_	_	29	11	18	-	29	1,252	43.17
12	7	5	_	-	-	37	16	21	-	37	1,656	44.76
66	13	48	1	4	-	95	41	54	-	94	2,303	
<b>3</b> 5	14	9	2	10	-	60	32	28	-	60	1,210	
13	10	<b>–</b>	2	1	-	25	14	11	-	25	1,092	
15	13	1	1	-	-	40	19	21	-	40	1,372	34.30
20	13	7	-	-	-	34	18	16	-	34	1,271	37.38
21	17	3	-	1	-	49	28	21	-	49	1,700	34.69
15	13	2	-	-	-	27	12	15	-	27	1,051	38.93
19	8	6	8	2	-	38	20	18	-	38	1,155	
80		7	2	4	-	. 27	9	18	-	27	864	
70	21	37	5	7	-	55	29	26	-	54	1,614	
<b>37</b>	28	4	3	2	-	67	44	23	-	67	1,808	26.91
25	8	10	4	3	-	44	16	28	-	43	$\begin{array}{ c c c c }\hline 1,102 \\ 1,226 \end{array}$	25·68 35·03
11	10	-	-	1	-	35	18	16	1	35		43.29
12	10	1.	1 2	1 1		35	13	22 32	-	35 73	1,515 2,197	
50 400	35	11	19	2	_	73 895	41 476	417	2	895	20,416	22.81
<b>49</b> 2	267	159	19	47	-	1 090	410	311	2	090	20,710	1 22 01

T	Distinguishing	d fr	Counties, by Months, and by	, by Mo	nths, a	nd by S	ex, the	Sex, the registered Number of	ed Nu	mber o		ren Bo	RN ALIV	E duri	Children Born Alive during the year.	ear.
Year and Months.	8 EX.		-STAT8	.eldaterraß	Berkshire.	.lotal1E	Dukes and Mantucket.	Essex.	Franklin.	Hampden.	.exideqmaH'	Middlesex.	Nortolk.	Plymonth.	Saffolk.	Wordester.
SAST SET	Totals, Males, Females, Unknown,		38,259 19,803 18,434 22	669 338 831	1,616 851 764	2,682 1,395 1,284	99 45 -	4,772 2,433 2,330 9	644 319 324	1,969 1,030 939	1,019 541 478 -	7,444 8,884 3,580 -	2,256 1,145 1,109	1,463 788 675	8,614 4,442 4,172	5,012 2,592 2,414 6
.ast	Totals, Males, Females, Unknown,	• • • •	2,916 1,489 1,424	840818	128 65 63	210 104 105	တေး၊တေး၊	388 209 173 1	8424	133	37 83 -	572 277 295	155	107 60 47	718 352 361	346 195 150
Feb.	Males, Females, Unknown,	• • • •	1,247	828 1	55 55	93		187	11 12 12	68	\$ 55 K 1 8	277	85	\$ <del>1</del> 4 5	333	179 160 160
.твМ	Males,	• • • •	1,651 1,450 1,450	1 8 8 F	200	105	4411	188	18881	<u> </u>	98 <del>1</del> 1	325 298 -	98	57	375 375 317	218 218 191
.nqA	Totals, Males, Females, Totals		3,015 1,585 1,430 8,094	4 <b>%</b> 없 4	134 62 27 251	123 123 102 220	<b>∞</b> 4 1℃ 1€	361 169 181 367	4888	148 80 157	26 4 4 5 8 6 8 8	552 308 249 564	180 99 175	118 61 57	874 830 830	433 242 191 450
.ysM	Males, Females, Unknown,		1,583 1,510	1 2 8 B	88 9	011	) H 4 1	170	3881	84	84 80 1	288	88 1	523	828	288 217

437 226 211	216 204 -	468 247 221	228 194 104	225 215 225 224 2424	211 212 419	205 214 1 1 1 1
891 345 346	760 383 877	388 888	802 305	770 414 356 710	884 800	484 868 1 1 1 1 1
115	139	184 75 59	සූ පස , ද	182 77 56 181	88 - 131	88 11111
80 80 97	176 87 89	217 118 99	187 93 94	197 95 102 -	112 109 - 207	95 95 1 1
828 276	631 329 302	851 351	808 808 1 8	341 348 348 -	351 292 761	365 365 12 12 12
<b>4</b> 252	1.64	86 49 87	5112	79 4 40.	40 39 102	864
152 78 - 47	164 77 87	210 113 97	176 94 82	200 104 96 - 156	88 17 171	97 47 
<b>2</b> 2 8 .	1 22 28	888	1 288	Q2 1 28 2 3 Q2 1 38 2 3	84 21 21 21	8811111
381 183 197	379 177 201	461 258 203	205 236 236	222 222 199 162	226 236 414	808 808 1188 1188
<b>∞</b> ∞ 1 1	ळ च च ।	16 10 10 10	<b>တဆတ</b> ( )	14 19	90 - 6	<b>20</b>
207 111 95	228 104 104	224 116 108	236 109 127	282 130 102 -	106 120 - 259	138 121 6 8
125 62 63	136 67 69	121 67 58 1	147 80 67	151 78 73 -	69 65 - 145	88 11111
<b>448</b> 1	888	2882	8228 1	82 42 58	22   28	\$ \$ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3,083 1,580 1,500 8	3,248 1,643 1,604	3,494 1,860 1,633	3,310 1,663 1,644	3,470 1,798 1,670 2 8,323	1,696 1,625 8,542	1,848 1,691 12 3 12 6 6
• • • •	• • •		• • • •		• • •	• • • • • • •
Totals, Males, Females, Unknown,	Totals, Males, Females,	Totals, Males, Females, Unknown,	Totals, Males, Females, Unknown,	Totals, Males, Females, Unknown, Totals,	Males, Females, Unknown,	Males, Females, Unknown, Totals, Males, Females, Unknown,
June	July.	Aug.	gebr	39O	.voV.	Unk. Dec.

# SUPPLEMENT A. PLURALITY BIRTHS-1870.

[Included in Tables I. and II.]

Year and Months.	8 E X.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Frankiin.	Hampden.	Hampshire.	Middlesex.	Norfulk.	Plymouth.	Suffolk.	Worester.
I.R.	Totals,.	697	18	51*	48	-	93*	15*	38	20	130	50	38	136	60
THE YEAR.	Males, .	365	11	16	26	-	44	10	20	14	58	34	21	76	35
ا ا	Fem., .	332	7	35	22	-	49	5	18	6	72	16	17	60	25
Jan.	Totals,. Males, . Fem., .	60 38 22	2 2 -	7 3 4	2 1 1	-  -  -	15 10 5	2 1 1	<del>-</del>  -	4 3 1	12 7 5	- -	2 1 1	12 10 2	2 - 2
Feb.	Totals,. Males, . Fem., .	46 19 27	$\begin{bmatrix} 2 \\ - \\ 2 \end{bmatrix}$	4 1 8	-	- - -	6 4 2	- -	2 2 -	2 2 -	12 3 9	6 8 3	- -	8 2 6	4 2 2
Mar.	Totals, . Males, . Fem., .	43 17 26	-  -  -	2 2 -	2 1 1	  -  -		3 3 -	2 2 -	- -	10 3 7	4 - 4	4 - 4	10 2 8	6 4 2
Apr.	Totals,. Males, . Fem., .	46 28 28	  -  -	4 1 3		-   -   -	4 1 8	-	2 2 -	2 2 -	10 5 5	8 7 1	2 2 -	10 2 8	4 1 3
May.	Totals,. Males, . Fem., .	50 25 25	4 3 1	2 1 1	2 - 2	<del>-</del>  -	6 1 5	2 1 1	2 2 -	2 - 2	8 5 8	2 1 1	2 2 -	14 8 6	4 1 8
June.	Totals,. Males, . Fem , .	62 31 31	2 - 2	2 - 2	4 2 2	 - -	10 5 5	4 3 1	1 8	2 1 1	8 8 5	6 4 2	4 2 2	10 6 4	6 4 2
July.	Totals, . Males, . Fem., .	64 87 27	2 2 -	4 2 2	8 4 4	-	12 6 6	- -	4 2 2	<u>-</u> -	14 6 8		4 - 4	12 11 1	4
Aug.	Totals,. Males, . Fem., .	60 27 33	-	6 - 6	6 3 3	- - -	8 4 4	2 1 1	6 2 4	- -	10 4 6	2 1 1	2 1 1	12 8 4	6 3 3
$\overset{\mathbf{Sept.}}{\longleftrightarrow}$	Totals, . Males, . Fem., .	60 89 21	4 3 1	2 - 2	2 2 -	  -  -	4 1 8	  -  -	8 4 4	2 2 -	8 6 2	2 2 -	10 8 2	8 4 4	10 7 8

#### SUPPLEMENT A.—Continued.

Months	SEX.	BEATS.	Barnstable.	Berkehire.	Bristol.	Dukes and Nantucket.	Rasex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Buffolk.	Wordester.
<b>i</b> {	Totals, . Males, . Fem., .	85 43 42	1 1 1	8 2 6	·8 5 8		14 7 7	-	6 1 5	- -	14 7 7	6 5 1	4 8 1	13 6 7	12 7 5
Nov.	Totals, . Males, . Fem., .	47 26 21	2 1 1	2 - 2	2 2 -	-	6 2 4	2 1 1	- - -	2 1 1	6 3 8	6 4 2	4 2 2	13 8 5	2 2 -
Dec.	Totals, . Males, . Fem., .	74 42 82		8 4 4	12 6 6	1 1 1	8 8 5		2 2 -	4 3 1	18 6 12	8 7 1	-	14 11 3	- -

<sup>\*</sup> Three cases of Triplets occurred in 1870; one of three males in Franklin County, and one comprising two males and a female in each of the counties of Berkshire and Essex. All were of Foreign Parentage.

SUPPLEMENT B.

ILLEGITIMATE BIR'TH'S-1870.

[Included in Tables I. and II.]

SEX.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket,	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Buffolk.	Worcester.
Totals,.	285	-	12	15	5	34	2	22	5	57	12	35	70	16
Males, .	131	-	4	10	-	11	2	13	2	88	8	15	29	9
Fem., .	154	-	8	5	5	23	-	9	8	24	9	20	41	7
Totals,. Males, . Fem., .	24 9 15	- - -	1 - 1	1 - 1	1 - 1	1 - 1	-  -  -	1 1 -	- -	4 2 2		2 2 -	11 3 8	2 1 1
Totals, . Males, . Fem., .	15 12 8	-	- - -	1 1 -	-  -  -	2 2 -	-  -  -	- - -	- - -	9 7 2	1 1 1	- -	3 2 1	  -  -
Totals,. Males,. Fem,.	24 11 18	- - -	1 - 1	  -  -	  -  -	3 - 3	<u>-</u>   <u>-</u>	6 4 2	- - -	6 5 1		1 1 -	6 1 5	1 - 1
Totals, . Males, . Fem., .	23 10 13	- -	1 - 1	  -  -	1 - 1	2 1 1	1 1 -	1 1 -	- - -	4 2 2	1 1 -	5 2 3	7 2 5	  -  -
Totals,. Males, . Fem., .	26 9 17	  -  -	1 1 -	1 - 1	  -  -	3 1 2	- -	4 3 1	- - -	2 1 1	3 - 3	4 - 4	6 2 4	2 1 1
Totals, . Males, . Fem., .	29 14 15	- - -	2 1 1	1 1 -	  -  -	4 1 3	- -	1 1 -	1 - 1	7 3 4	1 - 1	1 - 1	10 6 4	1 1 -
Totals,. Males, . Fem., .	27 8 19	-	1 - 1	1 - 1	- -	3 - 3	- - -	2 1 1	1 - 1	5 1 4	2 1 1	4 2 2	4 1 3	4 2 2
Totals, . Males, . Fem., .	22 12 10	-	1 1 -	2 2 -	- - -	4 1 3	- - -	1 - 1	- - -	8 8 5		1 1 -	3 3 -	2 1 1
Totals, . Males, . Fem., .	14 6 8	-  -  -	-  -  -	1 1 -	- - -	2 - 2	- - -	-  -  -	1 1 -	2 1 1	2 - 2	3 2 1	8 1 2	-
	Totals,. Males,. Fem.,. Totals,. Males,. Fem.,. Totals,. Males,. Fem.,. Totals,. Males,. Fem.,. Totals,. Males,. Fem.,. Totals,. Males,. Fem.,. Totals,. Males,. Fem.,. Totals,. Males,. Fem.,. Totals,. Males,. Fem.,. Totals,. Males,. Fem.,. Totals,. Males,. Fem.,.	Totals, . 285  Males, . 131  Fem., . 154  Totals, . 24  Males, . 15  Totals, . 15  Males, . 12  Fem., . 8  Totals, . 24  Males, . 11  Totals, . 28  Males, . 10  Fem., . 13  Totals, . 26  Males, . 10  Fem., . 17  Totals, . 26  Males, . 17  Totals, . 29  Males, . 14  Fem., . 15  Totals, . 29  Males, . 14  Fem., . 19  Totals, . 27  Males, . 18  Totals, . 27  Males, . 19  Totals, . 22  Males, . 19  Totals, . 22  Males, . 10  Totals, . 14  Totals, . 14  Males, . 14	Totals, . 285 -  Males, . 131 -  Fem., . 154 -  Totals, . 24 - Males, . 9 - Fem., . 15 -  Totals, . 12 - Fem., . 8 -  Totals, . 24 - Males, . 12 - Fem., . 13 -  Totals, . 24 - Males, . 11 - Fem., . 13 -  Totals, . 28 - Males, . 10 - Fem., . 13 -  Totals, . 26 - Males, . 9 - Fem., . 17 -  Totals, . 29 - Males, . 14 - Fem., . 15 -  Totals, . 29 - Males, . 14 - Fem., . 16 -  Totals, . 27 - Males, . 18 -  Totals, . 27 - Males, . 19 -  Totals, . 22 - Males, . 10 -  Totals, . 22 - Males, . 12 - Fem., . 10 -  Totals, . 14 - Males, . 6 -	Totals,. 285 - 12  Males, . 131 - 4  Fem., . 154 - 8  Totals, . 24 - 1  Males, . 9  Fem., . 15 - 1  Totals, . 15  Males, . 12  Fem., . 8  Totals, . 24 - 1  Males, . 11  Fem., . 13 - 1  Totals, . 28 - 1  Males, . 10  Fem., . 13 - 1  Totals, . 28 - 1  Males, . 10  Fem., . 17  Totals, . 26 - 1  Males, . 9 - 1  Totals, . 29 - 2  Males, . 14 - 1  Totals, . 27 - 1  Males, . 15 - 1  Totals, . 27 - 1  Males, . 15 - 1  Totals, . 27 - 1  Males, . 15 - 1  Totals, . 27 - 1  Males, . 16  Totals, . 22 - 1  Males, . 12 - 1  Totals, . 14  Totals, . 14  Males, . 14  Totals, . 14  Totals, . 14	Totals, 285 - 12 15  Males, 131 - 4 10  Fem., 154 - 8 5  Totals, 24 - 1 1  Males, 15 - 1 1  Totals, 15 - 1 1  Totals, 12 - 1  Fem., 8 - 1 - 1  Totals, 14 - 1 - 1  Totals, 28 - 1 - 1  Totals, 18 - 1 - 1  Totals, 28 - 1 - 1  Totals, 28 - 1 - 1  Totals, 29 - 2 1  Males, 11 - 1  Totals, 29 - 1 1  Totals, 29 - 1 1  Totals, 29 - 2 1  Males, 14 - 1 1  Totals, 27 - 1  Males, 27 - 1  Totals, 28 - 1 - 1  Totals, 29 - 2 1  Males, 14 - 1 1  Totals, 29 - 2 1  Males, 14 - 1 1  Totals, 29 - 1 1  Totals, 29 - 2 1  Males, 14 - 1 1  Totals, 22 - 1 2  Males, 12 - 1 2  Fem., 10	Totals,	Totals, 285 - 12 15 5 34  Males, 131 - 4 10 - 11  Fem., 154 - 8 5 5 23  Totals, 24 - 1 1 1 1  Males, 15 - 1 1 1 1  Totals, 15 - 1 1 1 1  Totals, 12 - 1 - 2  Males, 12 - 1 - 2  Fem., 8  Totals, 24 - 1 - 3  Males, 11 3  Males, 11 3  Totals, 23 - 1 - 1 2  Males, 10 1 1  Fem., 13 - 1 - 1  Totals, 26 - 1 1 - 3  Males, 27 - 1 1 - 3  Males, 14 - 1 1 - 1  Fem., 15 - 1 1 - 3  Totals, 27 - 1 1 - 3  Males, 14 - 1 1 - 3  Totals, 27 - 1 1 - 3  Males, 14 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 1 - 3  Totals, 27 - 1 2 - 4  Males, 3 3  Totals, 6 1 3	Totals,	Totals, 285 - 12 15 5 34 2 22  Males, 131 - 4 10 - 11 2 13  Fem., 154 - 8 5 5 23 - 9  Totals, 24 - 1 1 1 1 1 - 1  Males, 15 - 1 1 1 1 1 - 1  Totals, 15 - 1 1 1 1 1 - 1  Males, 12 - 1 1 2 - 2 -   Males, 12 - 1 1 - 2 -   Totals, 24 - 1 - 3 - 6  Males, 11 3 - 6  Males, 11 3 - 4  Fem., 13 - 1 - 1 2 1 1  Males, 13 - 1 - 1 2 1 1  Males, 14 - 1 1 - 3 - 4  Males, 14 - 1 1 - 3 - 4  Males, 14 - 1 1 - 3 - 4  Males, 15 - 1 1 1 1 1 1 1 1  Totals, 27 - 1 1 - 2 - 1  Males, 19 - 1 - 3 - 1  Totals, 22 - 1 2 - 4 - 1  Males, 19 - 1 1 - 3 - 1  Totals, 27 - 1 1 - 8 - 2  Males, 12 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Males, 12 - 1 2 - 3 - 1  Totals, 27 - 1 1 - 8 - 2  Males, 12 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 12 - 1 2 - 3 -   Males, 14 1 - 2   Totals, 14 1 - 2   Males, 12 - 1 2 - 4 - 1  Totals, 14 1 - 2   Males, 14 1 - 2   Males, 14 1 - 2   Males, 12 - 1 2 - 4 - 1  Totals, 14 1 - 2   Males, 15	Totals, 285 - 12 15 5 34 2 22 5  Males, 131 - 4 10 - 11 2 13 2  Fem., 154 - 8 5 5 23 - 9 3  Totals, 24 - 1 1 1 1 - 1 - 1  Males, 15 - 1 1 1 1 1 - 1  Totals, 15 - 1 1 1 1 1  Totals, 12 - 1 - 2  Totals, 12 - 1 - 2  Totals, 13 - 1 - 3 - 4  Males, 14 - 1 - 1 1 - 1  Totals, 26 - 1 1 - 3 - 4  Males, 17 1 - 2 - 1  Totals, 26 - 1 1 - 3 - 4  Males, 17 1 - 2 - 1  Totals, 29 - 2 1 - 4 - 1  Totals, 29 - 2 1 - 4 - 1  Totals, 27 - 1 1 - 8 - 2  Males, 16 - 1 - 3 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 25 - 1 1 - 3 - 1  Totals, 27 - 1 1 - 8 - 2  Males, 19 - 1 1 - 3 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 27 - 1 1 - 3 - 1  Totals, 29 - 2 1 - 3 - 1  Totals, 20 - 1 1 - 3 - 1  Totals, 21 - 1 - 3 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 3 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 3 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 22 - 1 2 - 4 - 1  Totals, 24 - 1 - 2 1  Totals, 25 - 2 - 1  Males, 6 1	Totals,      285	Totals, 285 - 12 15 5 34 2 22 5 57 12  Males, 131 - 4 10 - 11 2 13 2 33 3  Fem., 154 - 8 5 5 23 - 9 3 24 9  Totals, 24 - 1 1 1 1 1 - 1 - 4 - Males, 9 - 1 - 2 - 2 - 7  Males, 15 - 1 1 1 1 1 - 2 - 2 - 7  Totals, 15 - 1 1 1 1 1 - 2 - 9 - 7  Males, 12 - 1 1 - 2 9 - 7  Fem., 8 2 - 7  Totals, 24 - 1 - 2 9 - 7  Males, 12 - 1 - 2 7  Fem., 8 2 - 1 - 2 - 7  Totals, 24 - 1 - 3 - 6 - 6 - 6  Males, 11 3 - 4 - 5 - 7  Fem., 13 - 1 - 1 2 1 1 - 4 1  Males, 10 1 1 2 1 1 - 4 1  Males, 10 1 1 1 1 1 - 2 1  Fem., 13 - 1 - 1 1 1 1 - 3 - 4 - 2  Totals, 26 - 1 1 - 3 - 4 - 2 3  Males, 9 - 1 - 1 1 - 3 - 4 - 2  Males, 14 - 1 1 - 3 - 1 - 1 3  Totals, 29 - 2 1 - 4 - 1 1 7 1  Males, 14 - 1 1 - 3 - 1 1 1 3  Totals, 27 - 1 1 - 8 - 2 1 5 2  Males, 8 1 1 1 1 4 1  Totals, 22 - 1 2 - 4 - 1 - 1 1 1  Totals, 22 - 1 2 - 4 - 1 - 3 - 1  Totals, 22 - 1 2 - 4 - 1 - 3 - 1  Totals, 22 - 1 2 - 4 - 1 - 3 - 1  Totals, 22 - 1 2 - 4 - 1 - 3 - 1  Totals, 22 - 1 2 - 4 - 1 - 3 - 3  Fem., 10 3 - 1 1 1 - 3  Totals, 22 - 1 2 - 4 - 1 - 3 - 5  Totals, 14 1 - 2 1 - 3 - 5  Totals, 14 1 - 2 1 2 2  Males, 16 1 1 2 2	Totals, 285 - 12   15   5   34   2   22   5   57   12   35    Males, 131 - 4   10 - 11   2   13   2   38   3   15    Fem., 154 - 8   5   5   23   - 9   3   24   9   20    Totals, 24 - 1   1   1   1   - 1   - 4   - 2    Males, 15 - 1   1   1   1   - 1   - 2   - 2    Fem., 15 - 1   1   1   1   2   2    Totals, 15   - 1   1   1   1   2   - 2    Fem., 18   1   - 2   7    Fem., 18   1   - 2   7    Totals, 24   - 1   3   - 6   - 6   - 1    Males, 11   3   - 4   - 5    Fem., 13   - 1   - 1   1   1   1   - 2    Totals, 23   - 1   - 1   2   1   1   - 4    Totals, 26   - 1   1   - 1   1   1   2    Fem., 17   1   - 2   - 1    Totals, 29   - 2   1   - 4   - 1    Totals, 29   - 2   1   - 4   - 1    Totals, 27   - 1   1   - 3   - 4   - 2    Males, 19   - 1   1   - 3   - 1    Totals, 27   - 1   1   - 3   - 1    Totals, 22   - 1   1   - 3   - 1    Totals, 22   - 1   1   - 3   - 1    Totals, 22   - 1   1   - 3   - 1    Totals, 22   - 1   1   - 3   - 1    Totals, 27   - 1   1   - 3   - 1    Totals, 29   - 2   1   - 4   - 1    Totals, 20   - 1   1   - 3   - 1    Totals, 20   - 2   1   - 4   - 1    Totals, 22   - 1   2   - 4   - 1    Totals, 22   - 1   2   - 4   - 1    Totals, 22   - 1   2   - 4   - 1    Totals, 22   - 1   2   - 4   - 1    Totals, 22   - 1   2   - 4   - 1    Totals, 22   - 1   2   - 4   - 1    Totals, 22   - 1   2   - 4   - 1    Totals, 22   - 1   2   - 4   - 1    Totals, 22   - 1   2   - 4   - 1    Totals, 23   - 1   1   - 3    Totals, 24   - 1      Totals, 25      Totals, 26      Totals, 36      Totals, 47      Totals, 60      Totals, 60      Totals, 60      Totals, 60	Totals, 285 - 12 15 5 34 2 22 5 57 12 35 70  Males, 131 - 4 10 - 11 2 13 2 33 3 15 29  Fem., 154 - 8 5 5 23 - 9 3 24 9 20 41  Totals, 24 - 1 1 1 1 - 1 - 4 - 2 11  Males, 9 1 - 2 - 2 - 2 3  Fem., 15 - 1 1 1 1 1 - 1 - 2 - 2 - 3  Totals, 15 - 1 1 1 1 1 - 2 - 2 - 3  Males, 12 - 1 - 2 7 2  Fem., 3 2 1  Totals, 24 - 1 - 3 - 6 - 6 - 1 6  Males, 12 1 - 2 2 - 1  Totals, 24 - 1 - 3 - 6 - 6 - 1  Totals, 24 - 1 3 - 6 - 6 - 1  Totals, 24 - 1 3 - 2 - 1  Fem., 13 - 1 - 1 2 1 1 - 4 1 5 7  Males, 10 1 1 1 1 1 - 2 1 2  Fem., 13 - 1 - 1 2 1 1 - 4 1 5 7  Males, 10 1 1 1 1 1 - 2 1 2  Fem., 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

# SUPPLEMENT B—Concluded.

Months.	SEX.	BTATE.	Barnstable.	Berksbire.	Bristol	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Saffolk.	Worcester.
) }	Totals,. Males, . Fem., .	28 11 12	- -	8 1 2	3 3 -	-	3 1 2	1 1 -	- - -	1 1 -	1 1 -	-	3 1 2	6 1 5	2 1 1
Nov.	Totals, . Males, . Fem., .	81 18 13	- - -	- - -	2 2 -	1 - 1	2 1 1	-	1 - 1	1 - 1	5 4 1	2 1 1	8 4 4	8 5 3	1 1 -
) Sec.	Totals, . Males, . Fem., .	27 11 16	- - -	1 - 1	$\frac{2}{2}$	2 - 2	5 3 2	- - -	5 2 8		4 8 1	1 - 1	3 - 3	3 2 1	1 1 -

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#### TABLE III.—STILLBORN.

#### Distinguishing by Counties, by Months, and by Sex, the registered Number of Still-births during the year

Year and Months.	SEX.	BTATE.	Barnstable.	Berkshire.	Bristol	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
ا يـ	Totals,.	1019	10	7	9	3	139	5	31	12	146	49	14	521	73
Тне Уеав.	Males, .	573	7	4	8	2	69	5	17	9	90	25	6	295	36
HE	Fem., .	389	3	3	1	1	68	_	11	2	44	20	6	218	22
۱ ۲	Unk., .	57	-	-	-	-	7	-	8	1	12	4	2	13	15
Jan.	Totals,. Males,. Fem.,. Unk.,.	78 46 24 8	- - -	-			8 6 2 -		2 1 1 -		13 6 4 3	3 2 - 1	1 - - 1	49 30 16 3	2 1 1 -
Feb.	Totals,. Males,. Fem.,. Unk.,.	62 36 21 5		1 1 -		1111	12 5 5 2	- - -			7 5 1	3 1 2 -	1 - 1 -	34 21 12 1	4 3 - 1
Mar.	Totals, . Males, . Fem., . Unk., .	89 49 34 6	1 - 1	1	1	1111	20 15 5 -		5 2 2 1	1 1 - -	6 3 2 1	4 4 -	1 -1 -	45 21 22 2	1 1 2
Apr.	Totals,. Males,. Fem.,. Unk.,.	92 53 34 5	1	-	1 1 -		13 6 7 -	- - -	2 2 -	3 3 -	12 3 6 3	4 2 1 1	1 -	50 31 19	5 4 - 1
May.	Totals,. Males,. Fem.,. Unk.,.	89 49 38 2	1	2 2 - -	2 2 - -	1 -	13 5 8 -	- - -	2 2 -	1	13 6 7		-	48 25 21 2	6 5 1
June.	Totals, . Males, . Fem., . Unk., .	74 40 30 4		1 - 1 -	- - -	1 1 -	7 5 2 -	1 1 - -	2 - 1 1	-	8 7 1 -	7 2 5 -	2 1 1 -	35 18 17	10 5 2 8

TABLE III.—Concluded.

					=				==						_
Months.	SEX.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
July.	Totals,. Males, . Fem., .	90 50 40	1 1 -		-	1 1 -	13 6 7	1 1 -	1 - 1	-	19 12 7	6 2 4	- -	43 25 18	5 2 3
Aug.	Totals,. Males,. Fem.,. Unk.,.	89 52 34 3	1 - 1 -		- - -		10 4 5 1	- - -	3 2 1 -	2 -	14 9 3 2	5 2 3 -	-	46 29 17	8 4 4 -
Sept.	Totals,. Males,. Fem.,. Unk.,.	93 49 87 7	1 1 -		- - -	- - -	8 8 4 1	- - -	6 4 1 1	1 - 1 -	21 11 9 1	4 8 1 -	1 1 -	39 24 15	12 2 6 4
}	Totals, . Males, . Fem., . Unk., .	91 54 29 8	2 2 - -	1 1 -	2 2 - -	- - -	10 4 4 2	-	1 1 -	1 1 -	11 10 -	8 2 - 1	3 2 - 1	51 28 21 2	6 4 1 1
Nov.	Totals,. Males,. Fem.,. Unk.,.	76 40 80 6	1 - 1 -	1 - 1 -	2 2 - -	- - -	8 8 5 -	-	2 1 1 -	8 2 - 1	9 8 1 -	5 8 2 -	2 1 1 -	38 19 16 3	5 1 2 2
Dec.	Totals,. Males,. Fem.,. Unk.,.	95 54 38 8	1 1 -		1 - 1 -	- - -	16 6 9 1	8 8 - -	5 8 2 -		18 10 8 -	5 2 2 1	2 1 1	43 24 19	6 4 1 1
□ dnk.	Totals, . Males, . Fem., .	1 1 -	-	-	-	-	1 1 -	-	-	-	-	-	-	-	-

#### TABLE IV.—MARRIAGES.

#### Distinguishing by Counties, and by Months, the Number of Marriages registered during the year

YEAR AND MONTHS.	State.	Barnstable.	Berkshire.	Bristol.	Dukes.	Essex.	Franklin.	Hampden	Hampshire	Middlesex.	Nantucket	Norfolk.	Plymouth.	Suffolk.	Worcester.
THE YEAR,	14,721	283	523	917	32	2086	231	847	434	2714	32	698	585	3535	1854
January, .	1,363	43	32	86	2	178	<sub>_</sub> 17	84	34	240	3	69	62	348	165
February, .	1,163	28	45	55	5	164	19	76	41	215	2	42	35	292	144
March, .	751	22	25	50	1	126	22	40	26	121	2	30	80	158	98
April,	958	25	42	56	2	136	19	51	32	171	2	51	82	223	116
Мау,	1,314	16	49	83	3	169	17	93	33	224	2	70	46	343	166
June,	1,352	21	54	102	-	184	23	71	35	249	2	76	44	319	172
July,	1,059	12	34	68	1	178	19	49	29	180	5	41	33	269	141
August, .	944	11	26	59	4	140	14	59	21	182	3	34	23	237	131
September,.	1,256	13	46	76	4	171	14	62	35	274	1	74	88	305	143
October, .	1,445	20	54	79	4	184	16	80	42	277	4	61	48	369	207
November, .	1,935	39	58	127	3	287	28	119	66	356	1	94	92	435	230
December, .	1,180	33	58	76	8	169	23	63	40	224	5	56	52	237	141
Unknown, .	1	-	-	-	-	-	-	-	-	1	-	-	_	_	_

#### TABLE V.—MARRIAGES.

Exhibiting the Social Condition and Ages, respectively, of Parties

Married during the year

1870.
AGGREGATE—Of all Conditions.

ᅿ					AGE O	F FI	EMAI	E8.								
AGE OF MALES	ALL AGES.	Under 30	30 to 35	<b>35</b> to 80	30 to 85	35 10 40.	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	Over 80	Unknown.
ALL AGES,	14,721	2,924	6,494	2,992	1,025	581	301	160	73	54	28	14	6	2	-	67
Und. 20,	326		80		1	1	-	_	_	-	_	_	_	_	_	1
20 to 25,	5,625	1,860	3,200	498		10	_	1	-		-	-	-	-	_	
25 to 30,	4,528	628	2,285	1,363	195	41	7 9	-	-	1	-	-	-	-	-	8
30 to 35,	1,872	147	638	679	318				1	-	-	-	-	-	-	-
35 to 40,	915	37	197		233	137	39		-	-	-	-	-	-	-	1
40 to 45,	469	11	54	111	112	111	57	10	2 5	1 6 16	-	-	-	-	-	
45 to 50,	326	8	21	38	66	104				-	1	-	-	-	-	4
50 to 55,	235	1	4	12	27	41	69		23	6	1 2 1 9 9 3 3	1 2 3 3 1	-	-	-	
55 to 60,	155	-	4 5 2 3	13	13 5 · 2	35	33		11		1	2	-	-	-	
60 to 65,	121	-	2	-	5	12	25		15	24	9	3	-	-	-	6
65 to 70,	56	-	3	1	. 2	1	6		10	7 5	9	3	2 3	-	-	1
70 to 75,	25	-	-	-	-	1	-	4	7	5	3	1	3	-	-	1
75 to 80,	13	_	_	1	_		1	2	+	1	3	3	1	1	-	-
Over 80,	4	-	-	-	_	1	1	-	-	1	-	-	-	1	-	
Unk., .	51	-	1	1	_	1	-	-	-	-	1	-	-	=	-	47

#### (A) First Marriage of both Parties.

ALL AGES,	11,666	2,794	5,955	2,255	471	109	25	9	8	-	2	-	-	_	_	43
Und. 20,	319				_	-	-	-	-	-	_	_	_	_	_	1
20 to 25,	5,435		3,129	427	82	3	-	-	-	-	-	-	-	_	-	5
25 to 30,	3,989				118		3	-	-	-	-	-	-	_	-	4
80 to 35,	1,317	115	499	491	182		3 3	1 2	-	-	-	-	-	-	_	3
35 to 40,	390	22	103	129	93		4	2	-	-i	-	-	-		-	1
40 to 45,	119	2	17	34	33	29	3	-1	1	-1	_	_	_	_	_	_
45 to 50.	44	1	6	6	11	7	7	4	1	-1	1	-	_	-	_	_
50 to 55,	12	_	2	. 4	1	1	2	2	-	_	_	_	_	_		_
55 to 60,	8	_	1	4	_	1 2	1	_	-1	_	_	_	_	_	_	-
60 to 65,	1	_	_	_	_	-1	_	-	_	ᆜ	1	_	_'	_!	_	_
65 to 70.	$\bar{2}$	_	_	_	1	_	_	_	1	_	_!		_	_!	_	_
70 to 75,	_	_	_	_	_	_	_	_		_			_	ا_	_	_
75 to 80,	1	_	_	1			_	_	_	_	_'	_	_	_!	_	_
Over 80,	_	_	_	_	_		_		_	_			_			_
Unk.	29	_	_										_			29
UIIX., .	20				_		٦	7		٦	-1	-	Ī	-	-	20

TABLE V.—Continued.

#### (B.) First Marriage of Male and subsequent Marriage of Female.

3					<b>A</b>	GE OI	' FE	MAL	E8.							
Age of Males.	ALL AGES.	Under 20	30 to 35	<b>35</b> to 30	30 to 85	35 to 40	40 to 45	45 to 50	50 to 55	<b>55</b> to <b>60</b>	<b>60</b> to <b>65</b>	65 to 70	70 to 75	75 to 80	Over 80	Unknown.
ALL AGES,	696	9	104	288	163	108	40	18	5	4	2	_	_	-	-	5
Und. 20, 20 to 25, 25 to 30, 30 to 35, 35 to 40, 40 to 45, 45 to 50, 50 to 55, 55 to 60, 60 to 65, 65 to 70, 70 to 75, 75 to 80,	6 135 225 141 104 29 26 10 8 5 4	1 6 1 1 - - - -	2 48 35 7 3 1 1 - -	1 58 109 48 16 4 -	1 15 52 51 31 6 3 - 1	1 7 23 25 80 8 10 1 3	- 3 4 16 5 8 2 -	1 4 4 2 4 1 - 2	1 1 1 1 - 1	- - - - 3 1	- - - - 1 1			1.1 1 1 1 1 1 1 1 1 1 1 1		2
Over 80, Unk.,	3	-	-	-	-	-	-	-	-	-	-	-	- -	-	-	3

# (C.) Subsequent Marriage of the Male but First Marriage of the Female.

ALL AGES,	1,445	112	397	390	223	175	83	38	10	10	2	2	_	-	-	3
Und. 20,	-	_	-	_	_	_	_	-	-	_	-	-	_	_	_	_
20 to 25,	40	13	18	9	<u> </u>	-1	-	-	-	-	-	-	_	_	_	_
25 to 30,	254	44	118	76	14	1	-	-	-	1	-	-	_	-	_;	_
30 to 35,	819	30	125	108	44	12	-	-	-	-	-	-i	_		-	_
35 to 40,	295	15	80	94	67	31	8	-	-	-	4	_	-	_	_	_
40 to 45,	202	8	31	59	42	42	16	3	-	1	-	-	_	_	_!	_
45 to 50,	133	1	13	28	31	40	14	6	-	-	-	-	_	_	-1	_
50 to 55,	89	1	4	11	13	24	20	10	6	-	-	-	_	_	_	_
55 to 60,	60	_	4	4	11	14	15	9	1	2	-	_	_	_	_!	_
60 to 65,	30	-	1	-	1	5	8	7	1	4	1	2	_	_		_
65 to 70,	12	-	2	1	-	4	1	1	1	2	-i	_	_	_	-1	
70 to 75,	$\frac{3}{2}$	_	-	-1	_	_	_	2	1	-	-	-	_	_	_	_
75 to 80,	2	_	-	-	_	_	1	-	-	-	1	_	_	-	-	_
Over 80,	1	_	_	_	_	1	-1	-	_	-	4	-	_	_	_	_
Unk.,	5	-	1	_	_	1	-	-	-	-	_	-	-	_	-	3

TABLE V.—Concluded.

#### (D.) Subsequent Marriage of both Parties.

ğ						AGE	OF :	FEM.	ALE	3.						
Age of Maies.	ALL AGES.	Under 30	30 to 35	35 to 30	80 to 85	<b>8.5</b> to <b>4.0</b>	40 to 4.5	45 to 50	50 to 55	5.5 to 6.0	<b>60</b> to <b>65</b>	<b>65</b> to <b>70</b>	70 to 75	75 to 80	Over 80	Unknown.
ALL AGES,	872	5	33	98	165	186	151	95	52	42	23	11	6	2	_	3
Und. 20, 20 to 25, 25 to 30, 30 to 35, 35 to 40, 40 to 45, 45 to 50, 55 to 60, 60 to 65, 65 to 70,	9 49 90 124 118 122 121 79 85 38	1 1	-4 9 6 7 3 1 1 1	2 20 29 22 14 4 3 4	3 10 40 42 31 21 12 2 3 1	- .7 11 39 34 46 25 16 7	1 2 11 30 29 40 17 15 5	- 1 3 5 16 26 17 19	- - - 4 11 9 14 8 6	- - - 11 19 5	- - - 2 1 6 8 8	- - - 1 2 1 3	231			
70 to 75, 75 to 80, Over 80, Unk.,	22 10 3 2	=	-		1111	1	1 -	4 2 2 - -	6 - - -	5 1 1 -	3 2 - 1	3	3 1 -	1 1 -	-	1

## (E.) Conditions of Parties not stated.

									_							
ALL AGES,	42	4	5	11	8	8	2	-	1	-	+	-	4	4	-	13
Und. 20,	1	1 2	_	-	_		-	4	_	-	-	-	-	4	_	_
20 to 25,	6	2	1	2	11	-	-	-	-	-	-	-	-	-	_	_
25 to 30.	11	1	8	4	1;		-	-	_	-	-	-	-	_	_	2
80 to 35,		_	1	4 3	1	-	-	-	_	_	-	-	_	-	_	_
35 to 40,	5 2	_	_	1	_!	1	-	-	_	-	_	-	-1	_	_	_
40 to 45,	1	_	-	_	_	-	1	-	_	-	_	-	-	_	_	_
45 to 50,	1	_	_		-	1	-	-i	_	_i	_	_	-	-1	_	_
50 to 55,	3	_	_	_	_i	1	1	-	1	-	-	_	_	-	_	i –
55 to 60,	_	_	_	_	_	_	_	-	_	_	_	-	_	_	_	-
60 to 65,	_	_	_	_	_	_	-	-	_	_	-	_	_	_	_	_
65 to 70,	_	_	_	_	-	_	-	-	-	_!		-	-	-	_	_
70 to 75,	_	_	_	-	-	-	-	-	-	_	-	-	-	_	_	_
75 to 80.	_	_	_	_	-	-	-	-	-	-	-	-	_	_	_	_
Over 80.	_	_	_	-	_	-	-	-1	-	•-	-	-	-	-	_	_
Unk.,	12	_	-	1	_	-	-	-	-	-	-	-	-	-	_	11
					- 1	,	- 1					l	- 1	- 1		
			<u> </u>		<del></del>		<u>.</u>						<del></del>			

#### TABLE VI.—DEATHS.

#### Distinguishing by Counties, by Months, and by Sex, the registered Number of Persons who Died during the year

Year and Months.	SEX.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex,	Norfolk.	Plymouth.	Suffolk.	Worcester.
۱ ی	Totals,	27329	476	996	1862	163	3496	554	1499	760	5169	1399	1062	6428	3465
YEAR.	Males,	13699	244	537	929	82	1759	260	757	<b>3</b> 66	2499	684	535	3267	1780
THE	Fem.,	13598	232	456	929	81	1731	293	742	393	2667	712	523	3160	1679
£ [	Unk.,	82	-	3	4	_	6	1	-	1	3	3	4	1	6
Jan.	Totals, Males, Fem.,	2,072 1,061 1,011	23 9 14	37	155 78 77		275 149 126	23	97 47 50	18		97 48 54			128
Feb.	Totals, Males, Fem., Unk.,	1,907 936 -970 1		42		8 4 4 -	227 104 123	19	106 52 54 -	21	173	104 50 53 1	24		127
Mar.	Totals, Males, Fem., Unk.,	2,091 1,012 1,076 3	31 12 19		68	14 6 8	267 120 146 1	22	133 58 75 -	33		90 46 44 -		267	132
Apr.	Totals, Males, Fem., Unk.,	1,968 999 968 1	¦ 9	36		8 4 4 -	225 118 107 -		95 53 42	22	365 185 180				
May.	Totals, Males, Fem.,	2,035 1,006 1,029	20	59 28 31	144 73 71	20 11 9	146	16	119 62 57	54 23 31		104 40 64	89 47 42	244	
June.	Totals, Males, Fem., Unk.,	1,872 951 918 3	24	73 43 30	68	8 4 4 -	247 121 124 2	22	101 53 48 -		364 173 191 -	81 38 43 -		224	118
July.	Totals, Males, Fem., Unk.,	2,827 1,388 1,434 5			90	10 4 6 -	147	30			238	81	40	351	182

TABLE VI.—Concluded.

_						_		_	_						_
Months.	SEX.	STATE.	Barnstable.	Berkshire.	Bristol.	Pukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
Aug.	Totals, Males, Fem., Unk.,	3,285 1,705 1,579 1	61 29 32	114 73 41	208 111 97	13 8 5	437 212 225 -	33	175 90 85 -	107 52 55 -	649 336 312 1	176 87 89	132 71 61 -	716 370 346	429 233 196
Sept.	Totals, Males, Fem., Unk.,	2,696 1,334 1,355 7	47 26 21	96 52 42 2	181 90 91	9 4 5 -	366 202 163 1	16	147 70 77 -	70 36 34 -	501 218 282 1	149 75 73 1	111 58 51 2	607 304 303 -	357 183 174
) Oct	Totals, Males, Fem., Unk.,	2,407 1,242 1,164 1	62 31 31	73 44 29 -	179 94 84 1	26 13 13 -	346 185 161	51 19 32		51 29 22 -	453 216 237 -	123 65 58	94 53 41	559 283 276	283 150 133
Now.	Totals, Males, Fem., Unk.,	2,081 1,018 1,061 2	37 16 21	80 45 35 -	135 61 74	19 9 10	280 139 141 -	40 21 19	117 55 62 -	57 31 26 -	412 197 215	105 52 53	76 37 38 1	472 240 232	251 115 135 1
Dec.	Totals, Males, Fem., Unk.,	2,082 1,044 1,030 8	31 13 18	90 48 42 -	141 70 69 2	18 10 8 -	235 115 119 1			53 25 28 -	417 214 202 1	119 61 57 1	83 34 49 -	466 248 218 -	268 128 137 <b>3</b>
Unk. }	Totals, Males, Fem.,	6 3 3	-	1 1 -	-	-	1 1 -	-	3 1 2	- -	- - -	- -	- -	<u>-</u>	1 1

#### TABLE VII.-DEATHS BY AGE AND SEX,

Distinguishing by Age and by Sex, the Number of Deaths registered in each County distinguishing Sex, according to the U.S. Census of 1870,—and also with the

STATE AND COUNTIES.	Populat U. S. Ce 187	nsus,	Percentage of Deaths to Pop.	No. of Deaths Regist'd 1870.	Under 1	1 to 2	<b>2</b> to <b>8</b>	8 to 4	4 to 5	5 to 10	10 to
MASSACHUSETTS {	1,457,851 708,779 758,572	Per. Ma. Fe. U.	1·88 1·94 1·81	27,829 18.699 18,598 82	6,206 8,482 2,748 81	1,945 1,010 985	869 451 417	500 259 241	858 169 184	825 418 412	55 25 29
BARNSTABLE Co., .	82,774 16,085 16,789	Per. Ma. Fe.	1.45 1.62 1.89	476 244 282	65 88 27	16 12 4	18 12 6	. 5 1	4 1 8	10 5 5	1
SERKSHIRE COUNTY,	64,827 82,294 82,588 -	Per. Ma. Fe. U.	1.64 1.66 1.40	993 587 456 8	199 121 75 8	65 42 28 -	86 24 12 -	21 15 6	18 8 5	27 18 14	1
SRISTOL COUNTY, .	102,896 49,419 58,467	Per. Ma. Fe. U.	1.81 1.88 1.74	1,862 929 929 4	414 229 181 4	112 67 45	52 28 24	24 14 10	24 14 10	49 19 80	2
OUKES COUNTY, .	3,787 1,819 1,968	Per. Ma. Fe.	1 48 1 81 1 88	70 88 87	8 4 4		-	1 1	-	-	
BESEX COUNTY, .	200.848 95,498 106,845	Per. Ma. Fe. U.	1.74 1.84 1.64	8,496 1,759 1,781 6	762 418 848 6	216 125 91	84 87 47	78 89 89	51 25 26	104 55 49	7 8 4
FRANKLIN COUNTY,	82,685 16,862 16,278	Per. Ma. Fe. U.	1 70 1 59 1 80	554 260 293 1	80 41 88 1	84 18 21	12 7 5	4 1 8	528	14 10 4	1
HAMPDEN COUNTY,	78,409 87,882 41,027	Per Ma. Fe.	1 91 2 02 1 81	1,499 757 742	828 188 140	109 49 60	58 28 80	82 12 20	28 9 14	57 85 24	2 1
IAMPSHIRE Co., .	44,888 21.448 22,945	Per. Ma. Fe. U.	171 171 171	760 866 893 1	185 67 67 1	46 24 23	28 10 18	11 5 6	8	86 17 19	1
fiddlesex County,	274.858 181.959 142,894	Per. Ma. Fe. U.	1.88 1.89 1.87	5,169 2,499 2,687 8	1.225 688 585 2	831 176 206	170 88 81 1	81 87 44	76 41 85	167 69 96	11 4 6
VANTUURET Co., .	4.128 1,825 2,298	Per. Ma. Fe.	2·26 2 68 1 91	98 49 44	4	2 1 1	8	. 1 1	1	8 - 8	
TORPOLE COUNTY, .	89.448 42,944 46,499	Per. Ma. Fe. U.	1.56 1.59 1.58	1,899 6:4 712 8	292 161 128	74 42 82	89 19 20	29 14 15	15 10 5	89 21 18	2
PLYMOUTH COUNTY,	65,335 82.116 88,249	Per. Ma. Fo. U.	1.68 1.67 1.67	1,062 585 528 4	169 92 78	49 24 25	17 10 7	14 4 10	7 2 5	21 9 12	1 1
SUPPOLE COUNTY, .	270.802 129,482 141,820	Per. Ma. Fe. U.	2·87 2·52 2·24	6,428 8,267 8,160	1,746 955 790	564 284 280	288 120 118	181 73 58	89 87 52	187 103 85	10 4 5
Wordester Co., .	192,716 95 201 97,515	Per. Ma. Fe. U.	1 80 1 87 1 72	8,465 1,780 1,679	779 481 843 6	277 151 126	124 68 56	67 39 28	42 19 28	111 58 58	7 8

#### AND BY COUNTIES AND TOWNS-1870.

and Town in the State, during the year 1870,—in connection with the Population, Percentage of the Registered Number of Deaths to the Population.

_		To	T	1	T	15	T	1	T	I		T.S.	TC.	Ī.	No.	1	T
15	20	25	30	35	40	45	50	55	60	65	70	7.5	80	85	90	over	1
to	to	to	to	to	to	to	to	to	10	to	to	to	to	to	to	and	
20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	96	1
027 434 598	1,622 668 854	1,361 608 758	1,118 496 619	F40	980 459 521	967 581 486	910 491 419	927 508 419	997 546 451	1061 562 499	1170 585 585	1026 489 587	889 845 494	550 218 887	198 72 121	72 29 48	19 18 6
28 11 12	80 11 19	29 18 11	18 7 6	12	14 6 8	16 8 8	28 12 11	21 17 4	21 11 10	22 12 10	89 15 24	24 10 14	26 11 15	18 6 7	7 4 8	8 - 8	
48 19 24	58 29 29	29 11 18	25 11 14	43 22 21	10 17	26 11 15	16 16	20 16	41 28 18	58 80 28	47 29 18	88 16 22	47 24 23	84 12 22	8 2 6	7 8 4	10
66 24 42	107 48 59	81 87 44	66 22 44	62 88 29	70 83 87	66 40 26	71 89 82	70 87 88 -	87 47 40	84 43 41	82 40 42	88 41 47	62 27 85	65 26 89	14 9 6	6 2 4	14
1	10 6 4	8	8 1 2	2 2 -	8 1 2	8 8	1 1 -	8 - 8	4 2 2	2 1 1	9 4 5	1	7 8 4	2	2 1 1	1 - 1	=
185 . 56 . 80 .	181 78 168	197 88 109	126 58 68	140 61 79	121 57 64	124 62 62	109 50 59	106 55 51	121 68 58	68 61	172 87 85	182 66 67	106 85 71	87 86 51	26 11 15 -	7 2 5	104 95 9
24 15 9	87 19 18	27 10 17	24 11 18	15 8 7	17 8 9	15 11 4	28 15 8	15 7 8	28: 18 10	82 7 25	89 14 25	29 10 19	82 14 18	25 12 18	6 2 4	2 -	4 2 2
61 29	101 53 48	75 30 45	58 26 82	68 28 86	60 80 80	49 24 25	50 31 19	58 28 80	47 23 24	49 26 28	45 21 24	58 24 84	88 18 16	29 15 14	8	7 6 2	6 1 5
27 15	35 12 23	82 12 20	80 15 16	10 17	82 12 20	24 15 9	27 16 11	80 14 16 -	87 17 20	88 17 16	24 20 -	86 20 16	87 17 20	28 7 16	4	1	2 1
196 77 121	270 108 162	255 108 152	207 92 115	242 105 137	197 97 100	179 87 92	164 86 79	168 92 76	216 115 101 -	192 101 91	196 97. 99	186 85 100	145 59 86	76 24 52	81 14 17	16 4 12	22 11 11
3 2 1	4 8 1	2	4 2 2	2 1 1	8 - 3	8 1 2	2 1 1	5 8 2	5 4 1	7 4 8	12 7 5	9 4 5	9 6 8	1 1	2 - 2	1 -	1
18 81	82 85 47	76 81 45	58 24 29	61 26 86	38 18 20	47 28 24	45 24 21	48 17 26	50 29 21	71 41 80	74 89 86 -	71 40 81	54 16 88	88 18 25	20 7 18	2 2 -	10 5 5
40 18 22	48 23 26	42 15 27	51 21 80	38 16 17	81 18 18	44 24 20	86 19 17	86 21 15	62 85 27	56 84 22	77 47 80	89 61 88	52 24 28	87 14 28	18 6 12	2 1 1	1 8
205 87 118	374 163 211	881 151 180	825 158 172	814 160 164	262 128 189	268 166 108	218 124 94	220 189 81	93 82	191 101 90	185 82 168	118 45 68	105 81 74	54 21 88	28 6 17	9 5 4	2
141 56 85	185 80 106	182 98 89	180 58 77	189 68 76	106 51 54	100 57 48	110 69 61	121 68 53	108 66 42	140 77 68	149 79 70	158 78 75	124 60 64	66 27 89	24 10 14	6 2 4	8 2 6

TABLE VII.—Continued.

COUNTIES AND	Popul	ATION-	1870.		DEATHS.	·	Und.	1	2	8	4
Towns.	Persons.		Bex.	Per ct. to Pop.	Persons.	Sex.	1	2 2	to 3	4	to 5
Barnstable Co.	32,774	Tot. Ma. Fe.	32,774 16,035 16,739	1·45	476	476 244 232	65 38 27	16 12 4	18 12 6	6 5 1	4 8
Barnstable, .	4,793	{ Ma. { Fe.	2,298 2,495	1.38	66	84 32	2	1	2	-	- 2
Brewster,	1,259	{ Ma. { Fe.	614 645	1.83	23	14 9	4 -	-	1 -	-	-
Chatham,	2,411	{ Ma. Fe.	1,197 1,214	1.04	25	10 15	-	-	-	ī	=
Dennis,	8,269	{ Ma. { Fe.	1,578 1,691	1.68	55	28 27	6 6	2	2 1	1 -	-
Eastham,	668	{ <b>Ma.</b> { Fe.	-347 821	1.05	7	4 3	1 -	-	-	-	-
Falmouth, .	2,237	{ Ma. { Fe.	1,111 1,126	1.43	82	12 20	2 1	=	2 1	-	-
Harwich,	8,080	{ Ma. Fe.	1,540 1,540	1.33	41	23 18	1 1	3 1	-	1	1
Mashpee,	348	{ Ma. Fe.	160 188	2.30	8	. 1 7	1	- 1	-	-	-
Orleans,	1,323	{ Ma. { Fe.	630 693	2:12	28	13 15	3 2	2 1	ī	<u>-</u>	-
Provincetown, .	3,865	{ Ma. Fe.	1,907 1,958	1.37	53	28 25	12 7	1	2 -	-	-
Sandwich, .	8,694	{ Ma. { Fe.	1,800 1,894	1.60	59	38 21	4 2	-	2	2	-
Truro,	1,269	{ <b>Ma.</b> { Fe.	625 644	1.34	17	9	1	1 -	-	-	-
Wellfleet,	2,135	{ Ma. { Fe.	1,085 1,050	1.50	32	13 19	2	1 -	- 1	1	-
Yarmouth, .	2,423	{ Ma, Fe.	1,143 1,280	1.24	80	17 13	1 3	1	8 -	-	-
BERKSHIRE Co.,	64,827	Tot. Ma. Fe. U.	64,827 32,294 32,533	1·54	996	996 537 456 3	199 121 75 3	65 42 23	36 24 12	21 15 6 -	18 8 5
Adams,	12,090	{ Ma. { Fe.	6,068 6,027	1.79	217	103 114	83 29	15 6	10 5	2 2	2
Alford,	430	{ Ma. Fe.	223 207	8.93	13	12 1	2 -	2 -	1 -	-	-
Becket,	1,346	{ Ma. Fe.	683 663	1.19	16	7 9	- 1	1	-	1 2	ī
Cheshire,	1,758	§ Ma. Fe.	876 882	.57	· 10	4 6	2	-	-	-	=

Age and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	S & over.
10 5 5	10 3 7	23 11 12	30 11 19	29 18· 11	13 7 6	17 5 12	14 6 8	16 8 8	28 12 11	21 17 4	21 11 10	22 12 10	39 15 24	24 10 14	26 11 15	13 ·6 7	7 4 3	8 6 - 4 3 2
2 2	1 1	4	1 2	2	- 1	1 2	1 1	1	8 1	4	2 2	2 4	2 2	1 3	2 4	2 -	1	- -
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-	-	1	ī	2 -	- 2	ī	3	-	1 -	1 -	- 1	2 1	- 1	1	1	1	  -  -	=
1	2	1 8	2	3	1 -	<u>-</u>	-	2	1	2	1	1 -	2 1	1	1 3	1	_   2	= =
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-	ī	1	2	1 -	2	=	-	=	2	=	1 2	<u>-</u>	1 5	2 1	- 2	-	=	- 1 1
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2	=	-	1	2 8	ī.	-8	1 -	8	1	4 2	1 -	=	2 1	-	1	-	-	
1	2	2	2 -	5 1	1 -	1 -	1	1	4	1 -	2 -	2 -	2 6	2	4	-	1	1 -
-	1 -	-	2 1	ī	2	1 -	1	ī	-	_	-	1 -	ī	=	-   -	-	1	- -
-	1 -	1 2	3	ī	1 -	ī	ī	1 -	2	-	1	2 -	ī	1	1 2	ī		- 1
1	=	-	1 -	1 -	-	-	1 -	-	1	_	2	1 -	3 2	·2 1	1 1	- 1	-	= =
27 13 14	28 17 11 -	43 19 24 -	58 29 29	29 11 18	25 11 14 -	43 22 21	27 10 17	26 11 15 -	31 15 16 -	36 20 16 -	41 23 18	53 80 23	47 29 18	38 16 22 -	47 24 23	34 12 22 -	8 2 6 -	7 14 8 10 4 4 
<b>9</b> 1	3 2	1 8	6	2 6	3	3	4 8	3 2	1	2 4	5 6	4 3	24	1 5	1 2	- 4	-	2 1
1	-	-	-	-	-	1 -	-	-	<u>-</u>	- -	- -	1 -	1 -	-	3 -	1	-	===
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<u>- </u>	1		=	<u>                                     </u>	-	=	-	-	- 1	-	=	-	- 1	-	- 1	-	1	- 9

TABLE VII.—Continued.

COUNTIES AND	Popul	ATION—	1870.	:	DEATHS.		Und.	1 to	9 to	<b>3 1</b> 2	4 to
Towns.	Persons.	8	ex.	Per ct. to Pop.	Persons.	8ex.	1	2	8	4	5
Berkshire—Con. Clarksburg,	686	{ Ma. Fe.	362 324	2.92	2	1	-	=	-	-	-
Dalton,	1,252	{ Ma. { Fe.	585 667	1.68	21	1 <u>4</u> 7	8	1	=	-	-
Egremont, .	931	{ Ma. { Fe.	450 481	1.29	12	6 6	1 -	-	-    -	<u>-</u> 	-
Florida,	1,322	{ Ma. { Fe.	808 519	1.59	21	13 8	1 1	2	=	-	=
Gt. Barrington, .	4,320	{ Ma. Fe.	2,033 2,287	1.74	75	87 38	9	2 5	-	1 -	1
Hancock,	882	{ Ma. Fe.	455 427	.91	8	4	1 -	-	-	-	=
Hinsdale,	1,695	{ Ma. Fe.	800 895	2:36	40	24 16	8 1	1 -	2	1 1	9
Lanesborough, .	1,893	{ Ma. { Fe.	701 692	1.36	19	9 10	ī	1 -	- 1	2 -	] =
Lee,	3,866	{ Ma. Fe.	1,816 2,050	1.71	66	42 24	13 2	4	2	1 -	9
Lenox,	1,965	{ Ma. Fe. U.	1,002 963	1 53	80	18 16 1	7 8 1	=	=	1	=
Monterey,	653	{ Ma. Fe.	321 332	1.88	9	4 5	=	=	=	=	=
Mt. Washington,	256	{ Ma. Fe.	122 134	1.56	4	8 1	-	=	=	-	=
New Ashford, .	208	{ Ma. Fe.	121 87	.98	2	1	-	-	=	=	=
New Marlboro', .	1,855	{ Ma. Fe.	954 901	1 62	80	18 12	2	1 -	1	=	=
Otis,	960	{ Ma. { Fe.	497 463	1.25	12	8 4	2 -	2 -	-	-	=
Peru,	455	{ Ma. Fe.	941 214	2.02	9	6 3	=	1 -	1 -	1 -	-
Pittsfield,	11,119	{ Ma. Fe. U.	5,288 5,824	1.55	172	94 77 1	28 20 1	5 7 -	1 8 -	3 - -	=
Richmond, .	1,091	{ Ma. { Fe.	569 522	1.65	18	8 10	1 2	1 -	=	-	- 1
Sandisfield, .	1,482	{ Ma. { Fe.	788 <b>694</b>	-88	13	9 4	-	- 1	1 -	1 -	=
Savoy,	861	{ <b>Ma.</b> { Fe.	451 410	1.86	16	9 7	1 -	-	-	-	-

#### Age and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	95 & over.
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#### TABLE VII.—Continued.

Counties and	Popul	ATION—	1870.		DEATHS.		Und.	1 10	2	8	4
Towns.	Persons.	8	ex.	Per ct. to Pop.	Persons.	Sex.	1	2	to 3	to 4	5 5
Berkshire—Con. Sheffield,	2,535	( Ma. { Fe.	1,254 1,281	1.81	46	25 21	2	1 -	=	1 -	=
Stockbridge, .	2,003	{ Ma. Fe.	964 1,039	1.20	24	14 10	2 2	=	2	- 1	=
Tyringham, .	557	{ Ma. { Fe.	269 288	1.44	8	4	- 1	-	=	-	-
Washington, .	694	{ <b>Ma.</b> Fe.	373 321	1.15	8	6 2	2	<u>-</u>	=	-	=
W. Stockbridge,	1,924	{ Ma. { Fe.	1,009 915	1 98	38	21 17	3	1 8	2	-	1
Williamstown, .	3,559	{ Mu. Fe. U.	1,854 1,705	·90	82	14 17 1	4 1 1	1 -	1 1 -	- -	=
Windsor,	<b>6</b> 86	{ Ma. { Fe.	367 319	.73	5	4	2 -	-	-	-	=
BRISTOL Co., .	102,886	Tot. Ma. Fe. U.	102,886 49,419 53,467	1·81	1,862	1,862 929 929 4	414 229 181 4	112 67 45	52 28 24	24 14 10	24 14 10
Acushnet,	1,182	{ Ma. Fe.	557 575	2·12	24	16 8	1 -	1	1 -	j.	=
Attleborough, .	6,769	{ Ma, Fe.	3,309 3,460	2.14	145	62 83	9 11	4 3	5 5	1 1	2
Berkley,	744	{ Ma. Fe.	368 376	1.48	11	9	2	1 -	-	-	=
Dartmouth, .	8,367	{ Ma. { Fe.	1,648 1,724	1.87	63	41 22	10 6	1	=	1 -	-
Dighton,	1,817	{ Ma. Fe. U.	881 936	1.82	24	7 16 1	2 2 1	<u>-</u>  -	=	-	-
Easton,	8,668	{ Ma. Fe.	1,911 1,757	1.12	41	22 19	7 4	2	1 1	-	1 -
Fairhaven,	2,626	{ Ma. Fe.	1,240 1,386	2.02	53	29 24	12 2	1	-	-	-
Fall River,	26,766	{ Ma. Fe.	12,652 14,114	2.08	558	287 271	103 80	30 18	7 11	5 8	2
Freetown,	1,372	{ Ma. Fe.	670 702	-88	12	8	1 -	-	=	-	=
Mansfield,	2,432	{ Ma. Fe.	1,196 1,286	1.19	29	16 13	1 3	1	1	-	2
New Bedford, .	21,320	{ Ma. Fe.	9,880 11,440	1.78	879	167 212	34 36	14 7	4	2	2 5

#### Age and Sex, by Towns.

5 to 10	10 to 15	00	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	96 to 95.	Unknown.
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TABLE VII.—Continued.

COUNTIES AND	Popul	-KOITA	1970.		DEATHS.		Und.	1	2	8	4
Towns.	Persons.	e	lex.	Per ct. to Pop.	Persons.	Sex.	1	to 2	to 8	to 4	to 5
Bristol—Con. Norton,	1,821	{ Ma. Fe.	812 1,009	1.10	20	11 9	- 1	-	1 -	-	:
Raynham,	1,718	{ Ma. Fe.	842 871	1.52	26	11 15	1 8	-	-	-	-
Rehoboth,	1,895	} Ma, Fe.	918 977	•95	18	1 <u>9</u> 6	1 -	-	· _	-	-
Seekonk,	1,021	{ Ma. Fe.	512 509	1.87	14	6 8	-	ī	1 -	-	1
Somerset,	1,776	{ Ma. Fe.	929 847	1.52	27	14 18	4 2	- 1	1 -	-	-
Swanzey,	1.294	{ Ma. { Fe.	615 679	1.89	18	5 18	=	-	-	-	=
Taunton,	18,629	{ Ma. Fe. U.	9,124 9,505	1.98	368	182 183 8	87 29 8	12 12 -	6 2 -	4 1 -	5 9 -
Westport,	2,724	{ Ma. { Fe.	1,860 1,864	1.17	82	2 <u>1</u> 8	4	-	-	1 -	-
DUKES COURTY,	8,787	{ Tot. Ma. Fe.	8,787 1,819 1,968	1·43	70	70 83 87	8 4 4	111	-	1	-
Chilmark,	476	{ <b>Ma.</b> { Fe.	238 238	1.26	6	24	ī	-	=	-	=
Edgartown, .	1,516	{ Ma. Fe.	704 812	1.45	22	9 18	1 2	<u>-</u>	-	- 1	-
Gay Head, .	160	{ <b>Ma.</b> Fe.	82 78	1.25	2	2	-	-	=	-	-
Gosnold,	99	{ Ma. Fe.	55 44	8.08	8	8 -	1	-	<u>-</u>	-	=
Tisbury,	1,536	{ Ma. { Fe.	740 796	2:41	87	19 18	2	-	=	-	=
Essex County,	200,843	Tot. Ma. Fe U.	200,843 95,498 105,845	1.74	8,496	3,496 1,759 1,731 6	762 413 343 6	216 125 91	84 87 47	78 89 89	51 25 26
Amesbury, .	5,581	{ Ma. Fe.	2,780 2,801	1.48	80	47 83	14 5	8 2	ī	- 3	-
Andover,	4,878	{ Ma. Fe.	2,304 2,569	1.58	77	40 87	7 7	2 1	1	2 1	1 -
Beverly,	6,507	{ Ma. Fe.	8,112 8,895	1:47	96	84 62	10 12	8	- 1	ī	=
Boxford,	847	{ Ma. { Fe.	489 415	1.18	10	6 4	-	-	-	=	-

Age and Sex, by Towns.

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TABLE VII.—Continued.

COUNTIES AND	Portl	ATION-	1870.		DEATHS.		Und.	1 to	2 to	8 to	4 to
Towns.	Persons.	s	lex.	Per ct to Pop.	Persons.	8ex.	1	2	8	4	5
Essex—Con. Bradford,	2,014	{ Ma. Fe.	920 1,094	1.41	29	10 19	3 4	-	1 -	-	9
Danvers,	5,600	Ma. Fe. U.	2,751 2,849	1.55	87	42 44 1	14 4 1	4 2 -	2 -	1 1 -	1
Essex,	1,614	{ Ma. { Fe.	842 772	1.24	20	11 9	1 -	1	-	   -	1
Georgetown, .	2,088	{ Ma. { Fe.	995 1,093	-86	18	12 6	1	=	=	=	-
Gloucester, .	15,389	{ Ma. { Fe.	7,878 7,511	2.32	357	233 124	36 25	12 11	<b>2</b> 3	6	9 5
Groveland, .	1,776	{ Ma. Fe.	838 938	1.58	28	12 16	4 3	1 -	=	<u>-</u>	-
Hamilton,	790	{ Ma. { Fe.	409 881	1.64	13	7 6	-	<u>-</u>	=	-	-
Haverhill,	13,092	Ma. Fe. U.	5,383 5,685	1.56	204	103 98 3	19 16 3	6 3 -	8 1 -	1 2 -	1
Ipswich,	3,720	{ Ma. Fe.	1,757 1,963	1.83	68	32 86	1 6	2 1	=	1 -	-
Lawrence,	28,921	Ma. Fe.	12,618 16,803	1.72	498	239 259	76 72	23 22	11 11	8 12	13
Lynn,	28,233	{ Ma. Fe. U.	13,472 14,761	1.72	486	236 249 1	80 62 1	15 17	1 10 -	2 3 -	9
Lynnfield,	818	{ Ma. { Fe.	896 422	1.71	14	8 6	2	4	=	-	=
Manchester, .	1,665	{ Ma. Fe.	783 882	-96	16	11 5	2	-	1 -	  -	1
Marblehead, .	7,703	{ Ma. { Fe.	3,845 8,858	1.91	147	84 63	21 18	7 6	2 2	- 1	1
Methuen,	2,959	{ Ma. Fe.	1,892 1,567	1.15	34	16 18	3	1 1	ī	1 -	=
Middleton, .	1,010	{ Ma. Fe.	514 496	1.68	17	8 9	2 3	1 -	ī	=	-
Nahant,	475	{ Ma. Fe.	235 240	1.26	6	8	2 -	<u>-</u>	ī	-	 
Newbury,	1,430	{ Ma. } Fe.	746 681	1.82	26	14 12	5 -	ī	1 -	1	1
Newburyport, .	12,595	{ Ma. { Fe.	5,646 6,949	1.82	230	109 121	22 12	8 2	4 5	7 2	1
North Andover,	2,549	{ Ma. { Fe.	1,270 1,279	1.88	48	25 23	4 8	2	-	1	1

Age and Sex, by Towns.

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TABLE VII.—Continued.

COUNTIES AND	Popul	-KOITA	1870.		DRATES.		Und.	1	2	8	4
Towns.	Persons.	8	iex.	Per ct. to l'op.	Persons.	8e v.	1	10 <b>2</b>	8 8	to 4	5
Essex—Con. Peabody,	7,348	Ma.	3,732 3,611	1.38	101	49 52	9 18	6	ī	1 1	-
Rockport,	3,904	{ Ma. { Fe.	1,980 1,924	1.93	76	83 48	6 4	2 1	2 2	ī	-
Rowley,	1,157	{ <b>Ma</b> . Fe.	571 586	2-07	24	18 11	1	-	=	-	<u>-</u>
Salem,	24,117	{ Ma. Fe. U.	16,940 18,177	2.06	497	239 257 1	51 52 1	21 10 -	6 4 -	7 8 -	1
Salisbury,	8,776	} Ma. Fe.	1,828 1,948	1.80	68	33 35	9	1 -	  -	- 1	-
Saugus,	2,247	{ Ma. Fe.	1,088 1,159	1.88	81	12 19	8 4	-	2	-	-
Swampecott, .	1,846	{ Ma. { Fe.	907 9 <b>3</b> 9	1.73	82	12 20	8 -	- 1	-	-	=
Topsfield,	1,213	{ Ma. Fe.	593 620	1.15	14	5 9	1	-	-	-	=
Wenham,	985	{ Ma. Fe.	502 483	2·13	21	9 12	1 2		-	-	=
West Newbury,	2,006	{ Ma. { Fe.	1,029 977	1.15	23	12 11	2	1	-	=	1 -
Franklin Co., .	<b>32</b> ,635	Tot Ma. Fe. U.	82,635 16,362 16,273	1·70	554	554 260 293 1	80 41 88 1	34 13 21	12 7 5 -	4 1 8 -	5 2 8
Ashfield,	1,180	{ Ma. Fe.	<b>592</b> 588	1·10	13	6 7	-	1	-	-	=
Bernardston, .	961	{ Ma. { Fe.	472 489	1.04	10	4 6	-	1	-	-	_
Buckland,	1,946	{ Ma. { Fe.	1,0 <b>27</b> 919	1.64	32	18 14	5 1	1	-	-	=
Charlemont, .	1,005	{ Ma. { Fe.	480 525	1.69	17	9	1	2	-	-	ī
Coleraine,	1,742	{ Ma. { Fe.	846 896	1.49	26	11 15	2 1	-	ī	-	=
Conway,	1,460	{ Ma. { Fe.	742 718	1.85	27	10 17	1 8	ī	-	-	1
Deerfield,	8,632	{ Ma. { Fe.	1,847 1,785	1-49	54	23 81	5 7	1 2	1	1	1 -
Erving,	579	{ Ma. { Fe.	811 268	1 72	10	4	8	1 -	-	-	=
Gill,	653	Ma. Fe.	831 822	1.54	10	5 5	-	-	-	-	=

# Age and Sex, by Towns.

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5 to 10	10 to 15	15 to 20	20 to 25	25 to 80	80 to 85	85 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	95 & over	Unknown.
3 1	1 2	2 8	2	2 8	2 8	1 2	9 1	2 2	1	2	1 1	1	5 1	2	2	2 -	2	1	- -
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14 10 4	16 8 8	24 15 9	87 19 18	27 10 17	24 11 13	15 8 7	17 8 9 -	15 11 4	23 15 8 -	15 7 8 -	28 18 10 -	32 7 25	39 14 25	29 10 19	82 14 18	25 12 13	6 2 4 -	2 -	4 2 2
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TABLE VII.—Continued.

COUNTIES AND	Popul	ATION—	1870.		DEATHS.	Und.	1	2	3	4		
Towns.	Persons. Sex.			Per ct. to Pop. Persons. Sex.			1	2	to 3	to 4	5 5	
Franklin-Con.			1.540			1			Ī.			
Greenfield, .	8,589	{ Ma. { Fe.	1,740 1,849	2.09	75	40 85	9 7	4	1 2	1	ī	
Hawley,	672	{ Ma. Fe.	858 314	1.78	12	6 6	. 2 1	1	-	ī	ī	
Heath,	613	{ Ma. Fe. U.	802 811	·49 ·		- 2 1	- - 1	<del>-</del>  -	=	-	-	
Leverett,	877	{ Ma. { Fe.	437 440	1.03	9	5 4	-	=	   -	-	=	
Leyden,	518	{ Ma. { Fe.	265 253	1.16	6	5 1	1 -	1 -	-	-	-	
Monroe,	201	{ Ma. { Fe.	115 86	2:00	4	1 8	- 1	-	-	-	=	
Montague,	2,224	{ Ma. } Fe.	1,161 1,063	2.65	59	27 82	· 8	5	1	-	=	
New Salem, .	987	{ Ma. { Fe.	474 518	·81	8	4	=	=	-	-	=	
Northfield, .	1,720	{ Ma. { Fe.	822 898	1 28	22	11 11	2 -	-	-	-	=	
Orange,	2,091	{ Ma. { Fe.	1,029 1,062	1.86	<b>8</b> 9	18 21	4 2	2 2	1 -	-	_	
Rowe, .	581	{ <b>Ma</b> . { Fe.	299 282	1.88	· 8	1 7	-	=	-	-	-	
Shelburne, .	1,582	{ Ma. Fe.	767 815	1.77	28	10 18	1	1 1	1 -	-	-	
Shutesbury,	614	{ Ma. { Fe.	292 322	1.63	10	8 2	-	=	-	-	=	
Sunderland, .	832	{ Ma. { Fe.	413 419	2.04	17	5 12	1 2	-	-	<u>-</u>	=	
Warwick,	769	{ Ma. Fe.	889 880	1.82	14	6 8	2	-	-	-	=	
Wendell,	539	{ Ma. { Fe.	280 259	2.41	13	6 7	2	- 1	-	-	_	
Whately,	1,068	{ Ma. { Fe.	571 497	2.62	28	17 11	2 2	<u>-</u>	2	- 1	-	
Hampden Co., .	78,409	{ Tot. { Ma.   Fe.	78,409 87,382 41,027	1·91	1,499	1,499 757 742	328 188 140	109 49 60	58 28 80	82 12 20	93 9 14	
Agawam,	2,001	{ Ma. { Fe.	965 1,086	1.15	23	12 11	8 2	-	ī	-	-	

Age and Sex, by Towns.

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5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	80 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	95 & over	Unknown.
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57 35 22	40 29 11	61 29 32	101 53 48	75 80 45	58 26 32	63 28 35	60 30 30	49 24 25	50 81 19	53 28 30	47 23 24	49 26 23	45 21 24	58 24 34	83 18 15	29 15 14	8 - 8	7 5 2	6 1 5
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TABLE VII.—Continued.

COUNTIES AND	Portl	-KOITA	1870.		DEATHS.	Und.	1	2	8	4		
Towns.	Persons.	8	ex.	Per ct. to Pop.	Persons.	Sex.	1	to 2	to 8	to 4	5 5	
Hampden—Con. Blandford, .	1,026	{ Ma. Fe.	501 525	1.56	16	7 9	2	-	1	1 1	=	
Brimfield,	1,288	{ Ma. { Fe.	6 <b>3</b> 9 6 <b>4</b> 9	2.17	28	18 15	ī	2	=	1 -	-	
Chester,	1,258	{ Ma. Fe.	641 612	-80	10	<b>4</b> 6	=	ī	-	-	=	
Chicopee,	9,607	{ Ma. Fe.	4,284 5,823	1.84	177	91 86	20 16	5 5	5 4	1 1	1	
Granville,	1,298	{ Ma. { Fe.	656 6 <b>3</b> 7	1.28	16	8 8	ī	-	<u>-</u>	-	-	
Holland,	844	{ Ma. Fe.	178 166	2.04	7	4 8	- 1	=	-	-	-	
Holyoke,	10,788	{ Ma. Fe.	4,856 5,877	2 72	-292	139 158	47 86	15 19	8 8	8 8	47	
Longmeadow, .	1,842	{ Ma. Fe.	682 710	2.01	27	19 15	5 2	ī	- 1	-	-	
Ludlow,	1,186	{ Ma. Fe.	560 576	1.06	12	6 6	1 -	=	-	-	-	
Monson,	8,204	; Ma. Fe.	1,632 1,572	1.58	49	29 20	6	=	2	-	-	
State Almshouse at Monson, .	-	{ Ma. Fe.	-	-	36	20 16	8 5	14	1	1 -	1 1	
Montgomery, .	318	{ Ma. Fe.	172 146	2-92	9	6 8	1	_	-	-	=	
Palmer,	8,681	{ Ma. { Fe.	1,702 1,929	2.12	77	42 85	5 7	1 2	1 8	1 2	ī	
Russell,	685	{ Ma. Fe.	805 830	2-20	14	5 9	2	2	1 -	-	-	
Southwick, .	1,100	{ Ma. Fe.	562 538	•91	10	5 5	- 8	-	-	-	- -	
Springfield, .	26,703	{ Ma. { Fe.	12,894 18,809	1.85	494	252 242	78 46	92 20	7 10	5 6	8	
Tolland,	509	{ Ma. Fe.	282 227	-80	4	2	-	-	-	-	-	
Wales,	831	{ Ma. { Fe.	411 420	-72	6	3 3	1 -	=	-	- 1	-	
Westfield,	6,519	{ Ma. Fe.	3,125 3,894	2.07	185	64 71	14 11	1 5	2	2	_	
W. Springfield, .	2,606	{ Ma. Fe.	1,229 1,377	1.88	36	22 14	4	2	1 -	- 1	=	
Wilbraham, .	2,880	{ Ma. Fe.	1,156 1,174	-90	21	11 10	8 -	- \ -	=	-	_=	

Age and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	85 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	96 & over.	Unknown.
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TABLE VII.—Continued.

Counties and	Popul	ATION	1870.		DEATES.		Und.	1	2	3	4
Тоwиз	Persons.	8	ex.	Per ct. to l'op.	Persons.	Sex.	1	2 ·	3 3	to 4	to 5
Намреніве Со.,	44,388	Tot. Ma. Fe. U.	44,388 21,443 22,945	1·71	760	760 866 393	135 67 67 1	46 24 22 -	23 10 13	11 5 6	
Amherst,	4,035	{ Ma. { Fe.	2,042 1,993	1.88	76	34 42	7 9	2 1	1	1	 
Belchertown, .	2,428	{ Ma. Fe.	1,215 1,213	-92	24	10 14	2	=	-	=	
Chesterfield, .	811	{ Ma. Fe.	401 410	1.72	14	7	2 2	-	-	=	
Cummington, .	1,037	{ Ma. Fe.	504 533	2.60	27	18 14	1	- 1	1 1	-	
Sasthampton, .	3,620	{ Ma. { Fe.	1,640 1,980	1.63	59	24 35	5 9	1 6	- 1	ī	
Infield,	1,023	{ Ma. { Fe.	4 <u>49</u> 524	1.86	19	7 12	1 2	ī	- 2	=	
Goshen,	368	{ Ma. { Fe.	190 178	1 90	7	5 2	1	-	-	-	
Branby,	863	{ Ma. Fe.	432 431	1.74	15	6 9	1	1	-	=	
Freenwich, .	665	Ma.	819 846	1 96	13	8	1	- 1	_	=	
Hadley,	2,301	{ Ma. Fe.	1,201 1,100	1.91	44	17 27	2 3	1 2	-	1	Ì 
Hatfield,	1,594	{ Ma. { Fe.	811 783	2.45	39	20 19	4	3	2 3	1	
Huntington, .	1,156	{ Ma. { Fe.	549 607	2.51	29	15 14	4	2	-	_	[ [
Middlefield, .	728	{ Ma. Fe. U.	876 352	1.79	18	`8 4 1	2 1 1	1	1 - -	   -   -	   
Northampton, .	10,160	{ Ma. Fe.	4,860 5,300	1.59	162	90 72 •	18 14	5 2	2 2	_ 1	 
Pelham,	673	{ Ma. { Fe.	822 351	1.78	12	<b>4</b> 8	1	=	-	-	] 
Plainfield,	521	{ Ma. { Fe.	259 262	1.54	8	4	-	1	=	=	
Prescott,	541	{ Ma. { Fe.	265 276	-98	5	- 5	- 1	_	_	-	1
South Hadley, .	2,840	{ <b>Ma.</b> { Fe.	1,218 1,622	1.87	53	20 33	5 9	1	2	_ 	
Southampton, .	1,159	∫ Ma Fe.	590 569	1.90	22	· 11	2	1	_	-	l I

Age and Sex, by Towns.

to	19	20		ı	1	1												
5	to 20	25	25 to 30	80 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	95 & over.	Unknown.
14 11 3 -	87 92 15	85 12 23	32 12 20	30 15 15	27 10 .17	32 12 20	24 15 9 -	27 16 11	80 14 16	87 17 20	33 17 16	44 24 20	86 20 16	20	16	4	1	8 2 1
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TABLE VII.—Continued.

COUNTIES AND	Popul	ATION—	1870.		DEATHS.		Und.	1	2 to	<b>8</b> to	4 to
Towns.	Persons.		ex.	Per ct. to Pop.	¡Persons.	Sex.	1	2	3	4	5
Hampshire—Con. Ware,	4,259	{ Ma Fe.	2,006 2,253	1.53	65	36 29	8 2	2 8	1 2	1 -	2
Westhampton, .	587	{ Ma. Fe.	281 806	1.87	11	. <b>8</b>	2	-	-	-	=
Williamsburg, .	2,159	{ Ma. { Fe.	1,041 1,118	1.11	24	11 18	2 5	2 3	-	<u>-</u>	=
Worthington, .	860	{ Ma. Fe.	422 438	2-21	19	13 6	1 -	2 -	-	1	=
Middlesex Co.,	274,853	Tot. Ma. Fe. U.	274,853 131,959 142,894	1·88	5,169	5,169 2,499 2,667 8		381 176 205	170 88 81 1	81 87 44	76 41 85
Acton,	1,593	{ Ma. { Fe.	783 810	1.13	18	11 7	1 -	1 1	-	- ` -	-
Arlington,	8,261	{ Ma. Fe.	1,571 1,690	1.69	55	<b>3</b> 0 25	9 7	2 8	=	1 -	-
Ashby,	994	{ Ma. { Fe.	468 526	2.31	22	7 15	1	-	=	ī	-
Ashland,	2,186	{ Ma. { Fe.	1,136 1,050	1.65	36	18 18	5	1 -	=	1 -	=
Bedford,	849	{ Ma. Fe.	421 428	1.23	13	8 5	1	- -	=	1 -	=
Belmont,	1,513	{ Ma. Fe.	757 756	1.59	24	10 14	4	-	=	=	3 -
Billerica,	1,838	{ Ma. Fe.	875 958	1.64	80	15 15	8 2	- 1	2	=	=
Boxborough, .	838	{ Ma. Fe.	182 156	1.18	4	2 2	-	<u>-</u>	=	=	-
Brighton,	4,967	{ Ma. Fe.	2,631 2,336	1.77	88	45 43	18	8 2	2 1	=	2
Burlington, .	626	{ Ma. Fe.	* 324 802	1.12	7	4 8	_	=	1	=	=
Cambridge, .	89,634	{ Ma. Fe.	19,356 20,278	2.04	811	418 898	139 97	42 89	15 13	1 5	6 5
Carlisle,	569	{ Ma. Fe.	287 282	-88	5	4	2	-	-	=	-
Charlestown, .	28,323	{ Ma. Fe. U.	13,931 14,392	2.09	594	308 285 1	95 58		14 9 1	3 5 -	7 9 -
Chelmsford, .	2,874	{ Ma. Fe.	1,170 1,204	2.11	50	18 32	4 2	2 1	2	1	=

Age and Sex, by Towns.

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TABLE VII.—Continued.

COUNTIES AND	Popul	-KOITA	1870.		DEATHS.		Und.	1	2	3	4
Towns.	Persons.	8	ex.	Per ct to Pop.	Persons.	8ex.	1	10 2	to <b>8</b>	to 4	to 5
Middlesex—Con.	1		i	<u>.                                      </u>					<u></u>		<u> </u>
Concord,	2,412	{ Ma. { Fe.	1,190 1,222	1.57	88	17 <b>2</b> 1	5 4	2	=	ī	1
Dracut,	2,078	{ Ma. Fe.	1,050 1,028	1.49	81	14 17	5 2	1 -	1	<u>-</u>	=
Dunstable, .	471	{ Ma. Fe.	244 227	1.06	5	2 3	-	-	=	-	=
Everett,	2,220	{ Ma. Fe. U.	1,087 1,133	1:31	29	12 16 1	3 5 1	1 1 -	-	1 1 -	=
Framingham, .	4,968	{ Ma. Fe.	2,297 2,671	1.69	84	42 42	8	2 -	1 -	1 2	-
Groton,	3,584	{ Ma. Fe.	1,723 1,861	1.93	69	33 86	11 4	2	2 1	ī	1
Holliston,	8,073	{ Ma. Fe.	1,535 1,538	1.29	49	<b>3</b> 0 <b>19</b>	5 5	2 1	2	-	=
Hopkinton, .	4,419	Ma. Fe.	2,236 2,183	1.04	46	21 25	5 8	ī	- 1	-	9
Hudson,	3,389	{ Ma. Fe.	1,661 1,728	1.86	63	24 <b>3</b> 9	5 9	1 4	1 2	2	1
Lexington, .	2,277	{ Ma. Fe.	1,123 1,154	1.67	38	11 27	-4	- 1	=	-	=
Lincoln,	791	{ Ma. Fe.	892 899	1.52	12	7 5	2	1	=	-	· =
Littleton,	983	{ Ma. {·Fe.	502 481	1.02	10	1 9	- 1	=	- 1	<u>-</u>	_
Lowell,	40,928	{ Ma. { Fe.	17,494 23,434	2.32	952	441 511	124 111	41 54	23 24	11 12	8
Malden,	7,867	{ Ma. { Fe.	3,580 3,837	1.59	117	60 57	13 12	5 2	5	2	1
Marlborough, .	8,474	{ Ma. } Fe.	4,825 4,149	1.98	168	78 <b>9</b> 0	34 23	6 20	8 2	14	=
Medford,	5,717	{ Ma. { Fe.	2,906 2,811	1.50	86	88 48	10 7	1 8	-	1	9
Melrose,	8,414	{ Ma. Fe.	1,589 1,825	1.38	47	17 <b>3</b> 0	3	2	=	-	=
Natick,	6,404	{ Ma. { Fe.	8,208 8,196	1.66	106	53 53	14   9	3 1	1 2	3	ī
Newton,	12,825	{ Ma. { Fe.	5,978 6,852	1.01	130	62 68	13 10	8	1	1 -	-
North Reading, .	942	{ Ma. { Fe.	462 480	1.81	17	7 10	1	-	=	=	=

Age and Sex, by Towns.

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TABLE VII.—Continued.

COUNTIES AND	Popul	ATION—	1870.		DEATES.		Und.	1	2	8	4
Towns.	Persons.	8	ex.	Per ct. to Pop.	Persons.	Sex.	1	to 2	to 8	to 4	to 5
Middlesex—Con. Pepperell,	1,842	{ Ma. Fe.	889 953	1.52	28	10 18	8	2	-	=	=
Reading,	2,664	} Ma. Fe.	1,283 1,481	1.85	86	21 15	2	-	-	-	=
Sherborn,	1,062	{ Ma. { Fe.	508 554	1.60	17	5 12	=	ī	=	-	=
Shirley,	1,451	{ <b>Ma.</b> Fe.	726 725	2.27	88	14 19	7 2	1 2	ī	1 -	1
Somerville, .	14,685	{ Ma. Fe.	7, <b>29</b> 5 7 <b>,89</b> 0	1.76	258	132 126	51 44	10 11	3 2	1 1	1 2
Stoneham, .	4,518	{ <b>Ma.</b> Fe.	2,205 2,808	1.40	68	28 85	10 6	1	1 -	1 -	1 -
Stow,	1,818	{ <b>Ma.</b> Fe.	888 925	1.60	29	15 14	8	1	=	1 -	=
Sudbury,	2,091	{ Ma. Fe.	1,035 1,056	1-24	26	19 14	1 2	2	=	1	=
Tewksbury, .	1,944	{ Ma. Fe.	926 1,018	· <b>5</b> 1	10	<b>4</b> 6	1 -	ī	ī	<u>-</u>	-
State Almshouse at Tewksbury,	-	{ Ma. Fe.	-		246	132 114	28 24	1 8	2 2	-	2
Townsend, .	1,962	{ Ma. Fe.	989 973	1.58	80	14 16	1	2	1 -	- 2	=
Tyngsborough, .	629	{ Ma.   Fe.	829 800	1.59	10	5 5	1 -	=	-	<u>-</u>	=
Wakefield, .	4,135	{ <b>Ma.</b> { Fe.	1,994 2,141	1.62	67	84 83	7 4	1 2	2 1	1 -	] =
Waltham, .	9,065	{ Ma. Fe.	4,259 4,806	1.49	185	60 75	15 18	5 8	8 5	1 2	2
Watertown, .	4,826	{ Ma. Fe. U.	2,081 2,245	1.55	67	31 35 1	10 10 1	8 1 -	ī	- -	1
Wayland,	1,240	{ Ma. Fe.	624 616	1.86	28	11 12	2	1	1 1	-	=
Westford,	1,803	{ Ma. { Fe.	908 900	1.72	81	15 16	-	1	.ī	-	-
Weston,	1,261	{ Ma. Fe.	633 628	-79	10	5 5	-	=	=	-	-
Wilmington, .	866	{ Ma. Fe.	428 438	2.77	24	11 18	2	=	1 -	-	-
Winchester, .	2,645	{ Ma. Fe.	1,289 1,356	-98	26	12 14	8	1 -	-	1 -	-
Woburn,	8,560	{ Ma. Fe.	4,809 4,251	1.71	146	60 86	18 18	3 4	1 2	1	8

## Age and Sex, by Towns.

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TABLE VII.—Continued.

COUNTIES AND	Portl	MOITA	1870.		DEATHS.		Und.	1	2	8	4
Towns.	Persons.		Bex.	Per ct. to Pop.	Persons.	Sex.	1	to 2	to 3	to 4	to 5
NANTUCKET Co.,	4,123	Tot. Ma. Fe.	4,123 1,825 2,298	2.26	93	93 49 44	4	2 1 1	3 - 3	1 -	1
Norfolk Co., .	89,443	Tot. Ma. Fe. U.	89,413 42,944 46,499	1·56	1,399	1,399 684 712 3	292 161 128 3	74 42 32	39 19 20	29 14 15	15 10 5
Bellingham, .	1,282	{ Ma. Fe.	631 651	1.40	18	8 10	- 3	- 1	-	- -	-
Braintree, .	3,948	{ Ma. Fe.	1,941 2,007	1.72	68	88 85	7 5	- 2	- 8	-	=
Brookline,	6,650	{ Ma. Fe.	2,984 3,666	1.46	97	45 52	13 19	8 2	8 -	1 -	=
Canton,	3,879	{ Ma. Fe. U.	1,833 2,046	2·12	82	84 47 1	10 7 1	4 1 -	2 3 -	1 2 -	2
Cohasset,	2,130	{ Ma. Fe.	1,008 1,122	1.27	27	12 15	2 2	2	=	1 -	_ 1
Dedham,	7,342	{ Ma. Fe.	3,479 3,863	1.44	106	51 55	15 9	4 2	1 3	8 1	1
Dover,	645	{ Ma. Fe.	311 334	1.86	12	<b>4</b> 8	1 -	-	=	-	=
Foxborough, .	3,057	{ Ma. Fe.	1,301 1,756	1.81	40	18 22	1	2 1	- 1	- 1	_
Franklin,	2,512	{ Ma. Fe. U.	1,163 1,349	1 39	35 •	16 18 1	8 8 1	- -	2 -	1 1 -	-
Hyde Park, .	4,136	{ Ma. Fe.	2,017 2,119	1.74	72	39 38	12 10	4 2	- 1	- 8	1
Medfield,	1,142	{ Ma. Fe.	525 617	1.93	22	9 13	1	- 1	ī	=	-
Medway,	8,721	{ Ma. Fe.	1,823 1,898	1.40	52	26 26	8 2	2	=	1 -	1
Milton,	2,683	{ Ma. { Fe.	1,272 1,411	1.27	84	13 21	2 3	=	1	-	-
Needham,	3,607	{ <b>Ma.</b> { Fe.	1,749 1,858	1.66	60	39 21	13	8	1	-	1
Norfolk,	1,081	{ Ma. { Fe.	566 515	-74	8	7 1	2	-	=	  -	=
Quincy,	7,442	{ Ma. { Fe.	8,791 3,651	1.79	138	70 63	22 16	2 7	1	- 1	9
Randolph,	5,642	{ Ma. Fe. U.	2,782 2,860	2·15	121 ·	59 61 1	12 9 1	3 3 -	1 1 -	1 2 -	1

Age and Sex, by Towns.

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39 21 18	24 9 15	50 18 32		82 85 47	76 81 45	58 24 29	61 26 35	38 18 20	47 28 24	45 24 21	. 48 17 26	50 29 21 -	71 41 80	74 39 35 -	71 40 31	54 16 88	38 18 25	20 7 13	4 10 2 2 -	) 5 5
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TABLE VII.—Continued.

COUNTIES AND	Popul	ATION-	1670.		DEATHS.		Und.	1	2	8	4
Towns.	Persons.	8	ex.	Per ct. to Pop.	Persons.	Sex.	1	to 2	to <b>8</b>	to 4	to 5
Norfolk-Con.									١.		$\overline{}$
Sharon,	1,508	{ Ma. Fe.	729 779	2-06	81	15 16	8 2	1-	1	1 -	ī
Stoughton, .	4,914	{ Ma. Fe.	2,449 2,465	1.68	80	43 87	7 6	8 2	2 2	1 8	1
Walpole,	2,137	{ <b>Ma.</b> Fe.	1,021 1,116	1.26	27	15 12	1	-	=	=	=
West Roxbury, .	8,683	{ Ma. Fe.	3,993 4,690	1.16	101	50 51	10 9	4	2	2 1	ī
Weymouth, .	9,010	{ Ma. Fe.	4,502 4,508	1.55	140	66 7 <u>4</u>	20 18	6 2	2	1 -	=
Wrentham, .	2,292	{ <b>Ma</b> . { Fe.	1,074 1,218	1.44	88	12 21	2	- 1	ī	-	-
Рьчмочтн Со.,	65,365	Tot. Ma. Fe. U.	65,865 82,116 83,249	1.63	1,062	1,062 535 528 4	169 92 78	49 24 25	17 10 7	14 4 10	7 2 5
Abington,	9,308	{Ma. Fe. U.	4,688 4,620	1.19	111 ·	50 58 8	12 12 3	3 2	1 1 -	- 1 -	1 -
Bridgewater, .	3,660	{ Ma. Fe.	1,775 1,885	1.04	88	22 16	1 8	-	1	-	9
State Almshouse at Bridgewater,	-	{ Ma. { Fe.	-	-	75	<b>45</b> 80	10 7	-	=	-	=
Carver,	1,092	{ Ma. { Fe.	556 536	8-20	85	16 19	1 -	- 1	1 -	- 1	=
Duxbury	2.841	{ Ma. Fe.	1,158 1,188	1.24	29	15 14	-	2	-	-	=
E. Bridgewater, .	8,017	{ Ma. Fe.	1,465 1,552	1.79	54	24 80	8 2	3 1	-	ī	=
Halifax,	619	{ Ma. Fe.	292 327	1.62	10	6 4	- 1	-	=	=	-
Hanover,	1,628	{ Ma. Fe.	792 836	-92	15	6 9	1 -	1	<u>-</u>	=	1
Hanson,	1,219	{ <b>Ma.</b> { Fe.	596 628	-90	11	9 2	2 -	-	=	=	=
Hingham,	4,422	{ Ma. Fe.	2,070 2,852	1.09	75	33 42	6 5	2 1	1 -	1 -	=
Hull,	261	{ Ma. Fe.	184 127	. •76	2	1 1	1 -		-	=	-
Kingston,	1,604	{ Ma. Fe.	765 8 <b>3</b> 9	2.06	88	12 21	2 1	-	-	1 -	=

Age and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 10 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	95 & over.	Unknown.
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21 9 12	27 11 16	40 18 22	48 23 25 -	42 15 27	51 21 30	33 16 17	31 13 18	44 24 20	86 19 17	86 21 15	62 85 27	56 34 22	77 47 30	89 51 88	52 24 28	37 14 23	18 6 12	2 1 1	1 8
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TABLE VII.—Continued.

Counties and	Porul	ATION-	1670,		DEATHS.		Und.	1	2	8	4
Towns.	Persons.	8	lex.	Per ct. to Pop.	Persons.	Sex.	1	to 2	to 8	to 4	to 5
Plymouth—Con. Lakeville,	1,159	{ Ma. { Fe.	572 587	1.47	17	8	1 2	-	=	=	-
Marion,	896	{ Ma. Fe.	431 465	2.37	21	15 6	2	1 -	=	<u>-</u>	-
Marshfield, .	1,659	{ Ma. Fe.	809 850	1.45	24	18 6	2	-	=	=	-
Mattapoisett, .	1,361	{ Ma. Fe.	631 780	2-20	80	18 12	2 -	<u>-</u>	1 -	ī	-
Middleborough, .	4,687	{ Ma. { Fe.	2,263 2,424	1.69	79	89 40	5 6	5 8	1 -	-	-
No. Bridgewater,	8,007	{ Ma. Fe. U.	4,035 3,972	1.60	128	55 72 1	16 15 1	2 7 -	3 2 -	1 2 -	] -
Pembroke,	1,447	{ Ma. Fe.	748 699	1.81	19	1 <u>4</u> 5	1 1	1 -	-	-	-
Plymouth,	6,238	{ <b>Ma</b> . Fe.	2,979 8,259	1.70	106	55 51	7 8	8 1	- 2	- 3	1
Plympton,	804	{ Ma. Fe.	400 404	1.74	14	3 11	1	_	=	=	-
Rochester,	1,024	{ Ma. Fe.	497 527	1.95	20	10 10	2 1		=	=	:
Scituate,	2,350	{ Ma. Fe.	1,164 1,186	1.15	27	14 18	5 4			- 1	-
South Scituate, .	1,661	{ Ma. Fe.	830 831	1.87	31	14 17	1 2	- -	1 -	-	-
Wareham,	8,098	{ Ma. } Fe.	1,603 1,495	1-19	37	23 14	7	1	-	1 -	:
W. Bridgewater,	1,803	{ Ma. { Fe.	868 935	1.16	21	10 11	2 1		  - !	-	1
Suffolk Co., .	270,802	Tot. Ma. Fe. U.	270,802 129,482 141,320	2·37	6,428	6,428 3,267 3,160		564 284 280	233 120 113	131 73 58	89 87 59
Boston,	250,526	{ <b>Ma.</b> { Fe.	119,917 130,609	2.43	6,098	3,102 2,996		276 269	109 107	70 56	85
Chelsea,	18,547	} Ma. Fe.	8,652 9,895	1.68	312	1 <b>62</b> 150	46 42	8 11	11 6	2	9
Revere,*	1,197	{ Ma. Fe.	652 545	1.00	12	2 10	1 2	-	-	-	-
Winthrop,	532	{ Ma. Fe. U.	261 271	1·13	6	1 4 1	- 1	- - -	=	1 -	

<sup>\*</sup> Name changed from North Chelses, 1871.

DEATHS.

Age and Sex, by Towns.

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5 to 10	10 to 15	15 to 20	20 to 25	25 to 80	80 to 85	85 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.
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187 102 85	104 47 57	205 87 118	374 163 211	331 151 180	825 158 179	814 160 154	262 128 139	268 165 103	918 194 94	220 139 81	175 98 82	191 101 90	185 82 108	113 45 68 -	105 81 74	54 21 88 -	28 6 17
97 76	45		154 198	144 178	146 166	149 146	119 188	155 98	116 91	132 79	90 77	98 87	77 100	42 63	31 65	19 82	17
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TABLE VII.—Continued.

COUNTIES AND	Popul	-KOITA	1870.		DRATHS.		Und.	1	2	8	4
Towns.	Persons.	8	ex.	Per ct. to Pop.	Persons.	Sex.	1	to 2	to 8	to 4	to 5
Worcester Co.,	192,716	Tot. Ma. Fe. U.	192,716 95,201 97,515	1·80	3,465	3,465 1,780 1,679 6	779 481 842 6	277 151 126	124 68 56	67 39 28	42 19 23
Ashburnham, .	2,172	{ Ma. Fe.	1,102 1,070	1.84	40	25 15	7	4 2	1 -	1 1	1 -
Athol,	8,517	{ Ma. Fe.	1,732 1,785	2-27	80	40 40	9 10	1 2	5 -	1 1	1
Auburn,	1,178	{ Ma. Fe.	596 582	1·19	14	9 5	1 -	1 -	=	- -	=
Barre,	2,572	{ Ma. { Fe.	1,252 1,820	1.40	86	17 19	2 8	1	=	-	-
Berlin,	1,016	{ Ma. Fe.	491 525	1.57	16	7 9	-	=	=	-	-
Blackstone, .	5,421	{ Ma. Fe.	2,497 2,924	1.47	80	86 44	7	1	1 8	1	-
Bolton,	1,014	{ Ma. { Fe.	580 484	1.68	17	. 12	4 2	-	-	-	-
Boylston,	800	{ Ma. { Fe.	<b>392</b> 408	2:62	21	13 8	1 9	- 1	1 -	-	1
Brookfield, .	2,527	{ Ma. Fe.	1,250 1,277	1.42	86	16 20	2 6	- 2	1 1	1	-
Charlton,	1,878	{ Ma. { Fe.	929 949	1.60	80	15 15	1 1	1	-	-	-
Clinton,	5,429	{ Ma. { Fe.	2,422 3,007	2:06	119	47 65	7 16	11 9	2 5	1	9
Dana,	758	{ Ma. { Fe.	<b>869</b> <b>889</b>	2.51	19	9 10	2	=	- 1	1	=
Douglas,	2,182	{ <b>Ma.</b> Fe.	1,091 1,091	2·11	46	27 19	8 9	1 1	- 1	1	-
Dudley,	2,388	{ Ma. Fe.	1,179 1,209	1.18	97	10 17	9	2	=	1	]
Fitchburg,	11,260	{ Ma. Fe.	5,66 <b>3</b> 5,597	1.85	208	109 99	88 80	7 8	5	8 2	;
Gardner,	8,888	{ Ma. Fe.	1,657 1,676	1.65	55	26 29	8 7	1 8	=	- 9	;
Grafton,	4,594	{Ma. Fe. U.	2,285 2,309	1.85	69	27 84 1	4 5 1	2 1 -	<u>-</u>	9	-
Hardwick,	2,219	{ Ma. Fe.	1,109 1,117	-54	19	5 7	1 -	2	-	-	-
Harvard,	1,841	Ma. Fe.	636 705	2-09	28	17 11	5 2	1	-	-	-

Age and Sex, by Towns.

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5 to 10	10 to 15	15 to 20	20 40 25	25 to 30	30 to 35	85 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	95 & over.	Unknown.
111 58 53	74 88 86	141 56 85	185 80 105	182 93 89	130 58 77	139 63 76	105 51 54 -	100 57 48	110 59 51	121 68 58	108 66 42	140 77 68	149 79 70	153 78 75 -	124 60 64	66 27 39	24 10 14 -	6 2 4	8 9 6
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8	3	7	6 5	9 5	2	5	2	8	6 2	8	4	1 4	1	2 5	1 2	1 -	1	1	-
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TABLE VII.—Continued.

COUNTIES AND	Popul	ATION-	1870.		DEATHS.		Und.	1	2	3	4
Towns.	Persons.	s	ex.	Per ct. to Pop.	Persons.	Sex.	1	to 2	to 3	4	5
Worcester—Con. Holden,	2,062	{ Ma. Fe.	1,040 1,022	1.89	89	20 19	8 5	-	1	-	
Hubbardston, .	1,654	{ Ma. Fe.	861 793	1.51	25	12 18	2 1	· -	1	-	:
Lancaster,	1,845	{ Ma. Fe.	812 1,088	1.57	29	17 12	4 2	-	1	=	:
Leicester,	2,768	{ Ma. Fe.	1,887 1,481	2-06	57	<b>88</b> 19	7 2	4 2	4	1 -	:
Leominster, .	8,894	{ Ma. Fe.	1,954 1,940	2-28	89	54 85	11 5	2	1 -	- 1	:
Lunenburg, .	1,121	{ Ma. Fe.	541 580	1.43	16	6 10	ī	-	-	-	:
Mendon,	1,175	{ Ma. Fe.	576 599	1.86	16	7 9	1 2	1	-	3	:
Milford,	9,890	{ Ma. } Fe.	4,970 4,920	2·11	208	122 86	85 21	12 11	8 -	`5 -	;
Millbury,	4,897	{ Ma. Fe. U.	2,131 2,266	1.96	86	42 48 1	12 9 1	2 8 -	5	1 1 -	
New Braintree, .	64C	{ Ma. Fe.	826 814	1.09	7	<b>4</b> 8	1 -	-	-	-	:
Northborough, .	1,504	{ Ma. Fe.	717 787	1.59	94	11 18	1		-	-	:
Northbridge, .	8,774	{ Ma. Fe.	1,869 1,905	1.08	89	90 19	8 1	2	-	2	:
No. Brookfield, .	8,843	Ma. Fe. U.	1,726 1,617	1.58	58	25 27 1	8 10 1	4 8 -	1 1 -	111	:
Oakham,	860	{ Ma. Fe.	423 437	2 44	21	10 11	1 2	-	1 -	-	:
Oxford,	2,669	{ Ma. Fe.	1,298 1,376	1.83	49	26 23	4 8	1	1 -	1 -	:
Paxton,	646	{ Ma. Fe.	318 328	1.89	9	5 4	-	1 -	-	-	
Petersham, .	1,335	{ Ma. { Fe.	657 678	1.80	24	10 14	2 1	-	-	-	:
Phillipston, .	693	{ Ma. Fe.	855 388	1.01	7	8 4	-	-	-	-	:
Princeton,	1,279	{ Ma. Fe.	653 626	1.95	25	14 11	1 1	-	1 -	-	:
Royalston,	1,854	Ma.	674 680	1.70	28	11 12	8	-	-	-	:

Age and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	95 &over.
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3	-	2 2	3	- 2	1	2 4	1 2	1	8	4	4	7	. 3	4	- 1	1 3	1	-
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TABLE VII.—Concluded.

	Popul	-KOITA	1870.		DRATES.		Und.	1	9	8	4
COUNTIES AND TOWNS.	Persons.	8	ex.	Per ct. to Pop.	Persons.	Sex.	1	to 2	to 8	to 4	to 5
Worcester—Con. Rutland,	1,024	{ Ma. { Fe.	532 492	1.46	15	6	2	-	-	=	=
Shrewsbury, .	1,610	{ Ma. Fe.	820 790	1.80	29	11 18	1 2	1 1	ī	<u>-</u>	=
Southborough, .	2,135	{ Ma. Fe.	1,060 1,075	1.78	87	16 21	3 1	-	- 1	-	-
Southbridge, .	5,208	{ Ma. Fe.	2,506 2,702	1.82	95	41 54	12 19	6 4	- 1	-	1 1
Spencer,	8,952	{ Ma. Fe.	2,111 1,841	1.52	60	82 28	11 8	3	3 2	- 1	2 -
Sterling,	1,670	{ Ma. Fe.	812 858	1.50	25	14 11	3 2	=	_	-	-
Sturbridge, .	2,101	{ Ma. { Fe.	985 1,116	1.90	40	19 21	3 4	8	-	1	-
Sutton,	2,699	{ Ma. { Fe.	1,314 1,385	1.26	₹4	18 16	3 2	1 2	1	- 1	-
Templeton, .	2,802	{ Ma. Fe.	1,418 1,884	1.75	49	28 21	7 2	3 1	ī	- 2	=
Upton,	1,989	{ Ma. { Fe.	959 1,080	1.86	27	12 15	1 5	1 2	<u>-</u>	-	=
Uxbridge,	3,058	{ Ma. { Fe.	1,475 1,583	1-24	38	20 18	4	2	2 2	1 -	2
Warren,	2,625	{ Ma. Fe.	1,306 1 319	1 03	27	9 18	8 2	ī	- 1	-	=
Webster,	4,763	{ Ma. Fe.	2,831 2,432	1.15	55	29 26	5 1	4 1	5	2	1
Westborough, .	3,601	{ Ma. Fe.	1,854 1,747	1.86	67	44 23	11 4	12 2	- -	-	-
W. Boylston, .	2,862	{ Ma. Fe.	1,447 1,415	1.54	44	16 28	8 7	8 1	1 2	-	1
W. Brookfield, .	1,842	{ Ma Fe. U.	88 <u>4</u> 958	1.90	35 •	18 16 1	8 4 1	1 2 -	2 -	1 1 1	-
Westminster, .	1,770	{ Ma. Fe.	865 905	1-98	85	13 22	1 3	1 -	-	-	1 -
Winchendon, .	8,898	{ Ma. Fe.	1,709 1,689	2·15	73	41 32	6 7	1	1	2 2	ī
Worcester,	41,105	{ Ma. Fe. U.	20,405 20,700	2·18	895	473 417 2	141 101 2	49 41 -	20 18 -	12 9 -	8 5 -

Age and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	80 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	66 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95.	B& & over.	Unknown.
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TABLE VIII.—CAUSES OF DEATH.—ALPHABETICAL ARRANGEMENT.

Distinguishing by Months, by Age and by Sex, the registered Number of Deaths from various specified causes (alpha-

betically arranged), during the year 1870.
[Still-births not included in this Table.]

AGGREGATE.

9.	01 01 02 00 00 01 01	100 100 100 100 100 100 100 100 100 100		962 1828 2059 2188 1657 203	992 1832 2059 2188 1657 303 992 993 1107 1066 660 143	2072 1307 2001 1368 2035 1872 2837 3285 3895 2407 20081 2083 6 9891 812 652 1083 3889 2268 1363 1885 2059 2188 1657 2058 1091 986 1011 970 1076 968 1090 918 1434 1579 1365 11041 1001 1001 1001 1001 1001 1001 10
AGES.	98 91	5 4 5 5 4 4 5 6 4 4 6 6 4 4 6 6 4 4 6 6 4 6 6 4 6		889 2266 19	389 2266 19 271 1081 9	389 2266 19 271 1031 9 818 1235 9
	97 0	2 <b>8</b>		52 1083 2	52 1083 2	52 1033 2 59 437 1
	¥ 9	1 t		813 6	812 408 2	404 404 812 812 813 813
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	.Yeda	Decen		208	11 8 104	1 2089 8 104 1 1034
	mber.	MOVE	-	208	77 208 42 101	27 208 42 101 84 106
	.170111	Octob		-86 -87 -87	98 <b>28</b>	96 24 34 13 55 11 65
	dm	n Sn V		88 38	185 289 105 13	285 286 705 13: 579 18:
MONTES.		Jair.	-	827 32	827 32 388 17	827 32 388 17 434 11
<b>K</b> 01		Jane. July.	-	-878 -2	872 2 951 1	972 961 1181 1
		Mey.		2032	2035 1	1000
		Apdl		1968	1968	909
	'1	forald	-	2091	2091 101 <b>9</b>	2091 1018 1076
	.Low	Febru	-	1907	1907	1907 936 970
	·£r	annat		2072	2072 10 <b>6</b> 1	2072 1061 1011
	٩	LatoT		. <b>87,339</b> 2072 1907 2001 1968 2035 1872 2937 3285 3696 2407 2081 2083	977,3280	917,828
THS.		Unk.	-	•	• •	
DEATHS.	BEX.	Fem.	_	•	• •	26,
		Males	_	•	. 13,699	13,694
	BEX.		£	PERSONS, .	FERSONS, . Males, .	<u>.</u>

TABLE VIII.—Continued.

	1		SELES.							Š	MONTER	m².													AGES.	eć.				
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Males, Fem.,	eo .	.01	• •	۰.	TT	- I	11	1 1	17	1-		11	1 1	CN 1	11	11	<del>-</del>	Abscess, Lumbar,			<del>                                      </del>	11	<del></del>	-11	1-	T	. 11	<del>न</del> ।	11	<del>-    </del>
Males, Fem.,	. 58	.23		77	<b>61 01</b>	C0 41	CI	တတ	40	61 03	19		<b>⊢4</b>	& <b>&amp;</b>	8181	œ	<del>-</del>	Ansemia,	• •		9 10		တ က	22	410	<b>&amp;</b> C	<b>80 80</b>	စေအ	1 01	<del>न।</del>
Males, Fem.,	٠.			<b>∞</b> .	11	- I	1 1	1	1 -4	1 1	<del></del>	<del></del>	1 1	<del></del>	11	C)	<del>-</del> ₹	Aneurism, "	• •	• • •	11	11	11	11	₩	-1	<b>69</b> I	1.1	1 1	- 1 1
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SEX.	<b>60</b>	BEX.		•	·۲۵·	.T12					_		<b> </b>	<u> </u>				CAUSES OF DEATH.	<u> </u>	_	ı—	01	08	07	02	09	04	98	0	-tt.w
	M .10	Lem.	Unk.	Totals	andal	Febru:	danaM.	Apdl.	May.	June	July.	en#ny	Bepten	Ootobe	Мочеп	Decem	Опкпо			Under ot &	01 <b>O</b> L	12 to 3	o3 <b>08</b>	ot <b>08</b>	03 07	o1 <b>02</b>	01 09	01 02	Over &	ronain'
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Males, Fem.,	131	128		259	12	112	17	14 4	15	112	113	4100	~100	10	77	9	Bronchitis,	hitis, .		88	01 es		0101	eo 4	<del>س</del> ت	တ ၈၈	17	13.0	12	- 1
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Males, Fem.,	138	903		441	13	808	13	18	22	28	11 8	35	124	23	<u> </u>	10	Cancer,	••	••	क्रम	——————————————————————————————————————	<del>HH</del>	33	25.	15	8 8	88	53	12	1 1

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Males, Fem.,	<b>7</b> .		=	22.	40	<del>1001</del>	<del></del>		<del>24</del>	10.00	<u>∞</u> +	44	<b>60</b> 61	40	10	11	Cancer of Stomach,	ach,	11		<del></del>	11		F-10	12	201	514	10	1 1
Males, Fem.,	∾ .	<u>, 64</u>	<del></del>	₹.	1 1	11	1-1	1 1	11	11	<del></del> -	1 =	11	1-	1 1	1 1	Carbuncle, .	• •	1 1	11	11	<del>, ,</del>	- 1 1	 <del></del>	17			-11	1 1
Males, Fem.,	276	22		328	<b>∺</b> ∞	= 7	19	17 2	28 21 5 1		8 34 9 9	32	29	22	200	1 1	Casualty, .	• •	12	10 19 14 12 6 3		17 56 - 1	42	40	<b>28</b>	80 es	28	12	<b></b> 1
Males, Fem., Unk.,	314	. 286	<del> </del>	601	481	122	- <del>88 8 1</del>	<u> </u>	29 28 1 28 1	<u>481</u>	1 26	<del>2</del> 8-	48 I	13 21 -	21 15 -	111	Cephalitis, .	• • •	1912414 1602717 1	27.		10 13 	81 0	194	55	100	က တ ြ	H 63	1 1 1
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TABLE VIII.—Continued.

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Males, Fem.,	88.	. 22	<del>.</del> .	140	10	<b>∞</b> 1	<del>64</del>	<u>60</u>	9	5 5	<b>№</b> ∞	<b>84</b>	00 eo	ထက	10 to	41-	Nephria(Bright's Dis.),	ght's Dis.),	21	(O C)		32	17 12 1	120	15 17 7 9	127	∞ c/3	1 ==	1.1
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Males, Fem.,	14			21	1 ==	<del>न</del> 1	H 63	<del>-( )</del>		8) I	87	<del></del>		<del></del>	<del></del>	21	- Neuralgia,				11		<del></del>	1=	= 01	16	- en	6) 1	1 1
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- Paralysis,	E B	3	ig ,	Phlebitis,	Pleurisy,	8 3	Poisoned,	, tati	ate	å
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TABLE VIII.—Continued.

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Males, Fem.,	117		•	138	<b>F</b>	01	701	© 80	= -	814	==	13	21	<del>6</del> н	19	<b>ө</b> н	- Railroad	d Accident,	40	es ==	101	9-	쬬.	818	48	12	81	21	11	81
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Malos, Fem, Unk.,		<u>8</u> 4		<u>(e</u>	les, n.,	 	. <u>8</u>	<u>8</u>	. <u>8</u>	. g
E B	Ma	Males, Fem.,	Ma	Mal	Ma	Ma	Males, Fem ,	Males,	Males, Fem.,	Males, Fem ,

TABLE VIII.—Concluded.

		DEATHS.	TH8.						<b>*</b>	MONTHS	HS.												₹	AGES.					l
BEX.	<b>"</b>	SEX.		•		ļ				<u> </u>			.10	.76da	pper.	.mw	CAUSES OF DEATH.	DEATH.	2	I——				02	09	02	08	- 01	·awa
	Pl ales	Fem.	Unk	LatoT	annat	Febru	March	April.	May.	Jaly.	Yaka	Bepter	Octob	Мотеп	ресеп	Unkno			Under	01 2	12 to 10 to	01 08	ot <b>08</b>	01 <b>07</b>	ot <b>02</b>	ot <b>0.8</b>	01 OL	Over 6	Unkn
Males, Fem.,	02 .	.13	- : :	91	60	- 67	4	8 12	88	<del>6</del> 1	<del></del>	<u>ਨ</u> 4	4-	71	41 00		Suicide,		1 1		- 1 1	101	7 8 4	51 <del>41</del> 51 51	818	58	27	1 1	1.1
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Males, Fem.,	16		• •	87			21	लन	-167	1 00	<del></del>	<u> </u>	01 80	01 00		11	Syphilis,		11 8	14	-1-	ਜਜ	N N	<u> </u>	<del>.</del> .	11	<del></del> -	1 1	1 1
Males, Fem.,	195	168		363	12	<u> </u>	12	===	88	8	14 22 22	28 28 29 29	26	3 13	110	TT	Tabes Mesenterica,	senterica,	169 133	01	<del></del>	ကျ	200	01 69	14	40		101	1.1
Males, Fem.,	155	158	• •	308	10	<del>0</del> <del>0</del>	10 CI	4 9	<u>စာ</u> အ	8 Ci	242	25 30 28 30	26 26	- 00 00 - 10 00	84	1 1	Teething,		155 153	11	11	11	· ·	<del>-                                    </del>	· · ·	11		<del>-    </del> -	1.1
Males, Fem.,	15	. 4	•	13	-11	<del>न ।</del>	ο <sub>1</sub> Ι	0101	11	01	<del></del>	<del>8</del> =	<del>8</del> 1	<del>~ 1</del>	1~	1 1	Tetanus,		- 1	101	61 I	11	<del></del>	<del></del>	<del></del>	81		<del>-                                    </del>	1.1
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Males, Fem.,	<del>-</del> .	• •	•••	<del>-</del> -	<del></del>	11	<del>न</del> T	11		11	<del></del>	11	<del>     </del>	11	11	11	Trichiniasis,		1 1	11	1 1	ना	<del>-                                    </del>	<del></del>	11	<del>     </del>			1 1

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• •		Ucer of Intestines,		Uterus, Disease of,	Whooping Cough, .	
Tumor, .	cers,	cer of I	ıknown, "	zerus, Di	hooping "	Worms, .
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	71	1 1	288		122	———
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44 32 80 70		14 - 1	580 1101 45 51 86	. 18 . 18	140	11

# TABLE IX,-CAUSES OF DEATH,-Nosological Abrangement.\*

Exhibiting the Number of Deaths in each County, from specified causes (statistically classified), during the year

1870.

[Still-births included.]

OAUNES OF DEATH. BATATE. BATATE. BATATE. BATATE. BATATE. BATATE. BATATE.	All Causes,	CLASSES.)   CLASSES.)   CLASSES.)   CAMOTIC DISEASES.	I.—1. Miasmatic Diseases, 6,770 88 269 870 88 828 828 828 828 828 828 828 8. Dietic Diseases,	111 Diribotic Diseases. 1.308 17 87 108 6 245
Essex.	85 559 82 520	39 155 54 128 37 147 19 71	28 155 7	55
Hampden.	1,530 7	459 2 874 1 826 1 72	452 2 4 1	
Hampshire.	772 5,315 718 5,087	223 1,266 189 1,380 197 1,447 84 770 25 174	222   1,240 - 11 - 18 1 2	29 281
Nortolk.	5 1,448 7 1,861	6 285 0 361 7 483 0 225 4 67	288	
Plymonth.	1,076	192 297 335 159 25	181 10 1	49
Suffolk.	6,949	1,752 1,627 2,021 1,114 288	1,685 18 49	221
Worcester.	3588 3358	974 859 883 517 120	460 400 8	163

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### NOSOLOGICAL ARRANGEMENT.

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847 109 247 111 45 8	255 44 26 28	61 16 16 10	. <del>4</del> 1	181
255 225 243 243 142 17 82 82	790 48 174 107	163 11 28 - 86	ı	147
081 082 84 81 81 81 81	49 97 4	र्छ।।४।७	∞	33
200 200 200 1 L R	102 188 16	818818	1	88
208 406 408 1008 111 113	392 46 94 94	104	rò	278
17728	5 2 2	101	H	53
814 112 121 100 100 100 100 100 100 100 100	85 41 88 88	9 - 1 - 9 - 19 - 19		\$
1 11 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	87.00	811410	1	88
289 289 107 28 111 8	297 194 280	147 - 4 - 7 - 45	ı	153
11124300	\$ 61 82 <b>6</b>	P11114	1	16
216 57 127 19 11 11 8	181 181 85	14 1 2 2 1 2 1	NO.	113
888 88 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	27 72 18	8 1 8 8 1 8 8	ĸĢ	83
20 20 20 1 20 1 20 1 20 1 20 1 20 1 20	62 25 8	23	<b>~</b> .	82
2,176 1,001 2,185 987 892 40 97	2,118 259 1,144 885	687 29 91 828	58	1,824
III.—1. Diseases of Nervous System,	<ul> <li>[V.—1. Dev. Diseases of Children,</li> <li>2. Dev. Diseases of Adults,</li> <li>8. Dev. Diseases of Old People,</li> <li>4. Diseases of Nutrition,</li> </ul>	V.—1. Accident or Negligence, 2. Battle, 8. Homicide, 4. Suicide, 5. Execution, 6. Violent Deaths, not classed,	Sudden Deaths (Cause unascertained),	Causes not specified

\* See " Statistical Noology" in Appendix. † Including Stillborn. † Including 88 desthe from "Hemorrhage," 91 from "Tamor," and 49 from "Inflammation."

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### TABLE IX.—Continued.

Worcester.	964	322	36 - 59 - 45	234 16 5	ō	79 269 14	11 11
Buffolk	1,685	85 78	28 2 2 8 28 2 2 8 28 2 2 8	208 36 23	-	89 214 532 20	80 12
Plymouth.	181	118	8	128 I I	80	84 <del>4</del> 8	1-4
МогюЩ	283	H 67 5	17 - 19	覧 ト 4 I	4	22	61110
Middlesex.	1,240	922	28728	189 21 13	ı	81 18 18	171
Hampshire.	222	446	21 0 41	8 0 0 1	တ	25 c 84 c	- I &
Hampden.	452	15	287 87	121 5 2	တ	22 94 8	1 12
Franklin.	155		1 1 2 E	84 44 L I	တ	ర్ల అ జ్య ణ	0) 1 80
Fasex.	828	322	813 814 848	189 18 1	•	35 229 18	21.3
Dukes and Nantucket.	88	H 16	M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 2 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1	1	2011	· + ·
-fotetra	870	es 75 6		82 - 4 - 1	87	40 17 85 18	110
Berkshire.	269	133	 	ਲ 참 4 의 ।		88 19 7	110
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TIVIS	6,770	131	242 8 830 830	1,333 132 66 4	38	471 457 1,914 107	11 8
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H H	.:	• •	• • • • •	er.),	•	• • • •	• • •
CAUSES OF DEATH.	DISEASES—1. Miasmatic.	• •	• • • •	Fevoitis),	•	• • • •	• • .•
.ŧo	EAS Mias			intile Phlet Il Fe	. •	٠٠٠.	· · ·
USES	DISEASES.  —1. Miasmat		· · · · · · · · · · · · · · · · · · ·	(and Infantile Felas (and Phlebitis) (Puerperal Fever)	•	· · intum	ever,
CA)	-	¥ .	点。 第一。 で	(and las (a Pue ile,	ę.	iry, ia, Infa	nt F
	Totals,	Smallpox, Measles, .	Diphtheria, Croup, Whooping Cough,	Typhus (and Infantile Fever), Erysipelas (and Phlebitis), Metria (Puerperal Fever), Carbuncle,	Influenza,	Dysentery, Diarrhœa, Cholera Infantum Cholera,	Ague, Remittent Fever Bhcumatism, .
		⊢i oi ∝	4.00%	8.9.9.1. 11.0.9.8	12.	81.44.61.61.61.	18.13

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1	1111	ı	1111	-	1-	88	1121
63	Hee	4	-118	-	1 ==	88	1 25 25 62
1	1111	1	1111	1	1 1	31	1811 14
4	8111	7	1-04	1	1 1	245	146 777 88
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ı	1111	rc	1144	1	1 1	103	1 47 88 87 F
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	1111	es	1187	-	1-	17	11.841
47	5 8 8 2	&	13 27 48	G	8	1,306	4 568 516 172 46
•		•		•	•••	•	• • • •
12. Enthetic.	Syphilis,	I.—3. Dietic.	Privation, Purpura and Scurvy, Delirium Tremens, Intemperance, Stocholism,	I.—4. Parasitic.	Thrush,	II.—1. Diathetic.	Gout,
	ધ્યું છે. વ્યું		નું લાં લાં નાં		નંલં		મું છું છું ત્યું જે

TABLE IX.—Continued.

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Worcester.	989	——————————————————————————————————————	347		1 1 69
Suffolk.	1,406	203 1,040 181	988	206 85 86 86 28 1 1 1 16 167 94 94	7 6 212
Plymouth.	248	5 14 221 8	130	25 25 25 10 10 10 10 10 10 10 10 10 10 10 10 10	L 1 42
Norfolk.	285	848 88 88	165	254 4 1 6 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	17
Middlesex.	1,119	81 923 100	521	88 119 121 12 12 44 87 87	199
Hampshire.	160	150 150	76	113 112 112 113 113 113 113 113 113 113	2211
Hampden.	908	11 278 16	113	21 12 26 4 10 10 10 7 7	1.4
Franklin.	26	93.1	58	9 11 10 10 10 10 10 10 10 10 10 10 10 10	21.
Essex.	808	15 742 45	314	51 822 12 12 62 62 63 129	2 - 127
Dukes and Mantucket.	24	811831	16	9 HHLII 644	110
Bristol.	451	411 411 17	216	48 116 118 12 12 13 14 19	1 2 2 2
Borkshire.	170	156 8	8	13 14 16 19 19 19 18	31.
Barnstable.	108	102 8	51	7	1 1 83
.atat8	5,879	105 363 5,003 408	2,776	601 884 630 103 1134 124 127 867 867	15 8 978
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DEATH.	ılar.	r Lu lar	Syste	Froud	
DE.	bercı	a. ption of Lungs) Inbercular Men	ous	£	-
CAUSES OF	II.—2. Tubercular	o at	III.—1. Nervous System.	halitis,  alysis,  unity,  unity,  lepsy,  anus,  in Diseases, \$c.,  in Diseases, \$c.,  Cotals,	
AUSE	3	enter onsu	٠ آ		rditis, . ism, . Diseases, &c.,
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	Totals,	Scrofula,. Tabes Mesenteri Phthisis (Consur Hydrocephalus (	Tot	Cephalitis, Apoplexy, Paralysis,	Pericarditis, Ancurism, Heart Disca
		4		<b> ಚ.ಜ.ಕ.ಸ್.ಕ.ಸ.</b> ಇ.	મંલંલ

III.—3. Respiratory Totals,	_	Organs		•	2,185	- 88	8	127	10	589	88	112	11	408	100	2	649	247
1. Epistaxis, 2. Laryngitis, 3. Bronchitis, 4. Pleurisy, 5. Pneumonia, 6. Asthma, 7. Lung Diseases, \$c.,		• • • • • •			259 259 75 1,718 66	1144814	11-050-	1-04/404	1144011	- 102 88 7 ZI	1112211	101121	1 1 8 8 8 8 8	- 84 820 821 112 123 124 125 127 127 127 127 127 127 127 127 127 127	1 17 8 47 8 8	1 1 2 2 2 1 4	157 157 25 429 18	- 10 8 41. 11 4
III.—4. Digestive Totals,	tive 0	rgans.	•	•	186	83	87	88	7	107	83	37	17	808	2	43	248	111
1. Gastritis, 2. Enteritis, 3. Peritonitis, 4. Ascites, 5. Ulceration of Intesti 6. Hernis, 7. Heus, 8. Intussusception, 9. Stricture of Intestin 10. Fistula, 11. Somach Disease, yc. 12. Pancreas Disease, yc. 13. Hepatitis, 14. Jaundice, 16. Liver Disease, yc. 16. Liver Disease, yc. 16. Spleen Disease, yc.		• • • • • • • • • • • • • • • • • • • •	••••••	• • • • • • • • • • • • • • • • • • • •	288 86 86 83 111 8 89 8 111 8 89 1 44 1 144 1 486 1 48		8811118111411401	118 111   11   12   14   15   16   17   17   17   17   17   17   17		7272188181218911	000111011101110			252 222 223 111 111 111 111 111 111 111 11	8 0 4 8 1 2 7 2 1 1 1 4 1 1	000110411101000	48867474161181874	048 1148 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Totals,   Causes or Death.   Causes or Death.   Causes or Death.   Causes or Death.   Causes or Death.   Causes or Death.   Causes or Death.   Causes or Death.   Causes or Causes,   Causes or Causes or Causes,   Causes or Causes,   Causes or Causes,   Causes or Causes,   Causes or Causes,   Causes or Causes,   Causes or Causes,   Causes or Causes,   Causes or Causes,   Ca	Worcester.	45	8 I 8	0400		<b>-1</b> 2	15	15	Ð	ro	۲,
OF DEATH.  OF DEATH.  Industry Organs.  Disease),	Saffolk.	142	2012	ကြောက္	14	<b>တ</b> ဝာ	25	24	32	24	ာတ
DEALTH.   DEALTH.   DEALTH.   DISCARS.   STATE.   STATE.   STATE.   STATE.   STATE.   STATE.   STATE.   STATE.   STATE.   State	Plymouth.	18	<del>п</del> 1 ю	01 I	7	1 -	67	1 63	Ø	81	1 1
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DEATH.   STATE   STA	Hampden.	12	1100	414	H	1-	ဗ	1 60	4	-	- 67
Discase    Discase	Frankiln.	æ	111	01 H 10	, -	1 =		- 1	ı	1	1 1
Direct of Death.   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Disease),   Direct of Direc	Essex.	28	114	10 10 to 10		7	11	11	9	70 -	<del>-</del> 1
OF DEATH.  State   Sta	1 1	2	1 1 1	0111	l I	1 1	1	1 1	1	1	1 1
or DEATH.    State	Bristol.	19	111	8 T I	1	1-	11	11	∞	9	1 03
of Death.  inary Organs.  392  inary Organs.  392  140  55  iravel, &c.), 20  136  rative Organs.  40  if the condition of Locomotion.  s of Locomotion.  10  10  10  10  10  10  10  10  10  1	Berkshire.	12	-1 18	01101	r 61		63	1 63	4	4	1 1
inary Organs.  Disease),	Barnstable.	6	HIH	8H 14	Η Ι	1 1	<b></b>	100	1	1	<u> </u>
III.—5. Urinary Organs.  Totals,  Nephritis, S. Ischuria, S. Nephrius (Bright's Disease), G. Cystitis, T. Kidney Diseases, &c., III.—6. Generative Organs. Totals, Ovarian Dropsy, Diseases of Uterus, &c., III.—7. Organs of Locomotion. Totals, Joint Disease, &c., III.—8. Integumentary System. Totals, Totals, Joint Disease, &c., III.—8. Integumentary System. Totals, Shin Diseases, &c., Shin Diseases, &c., Shin Diseases, &c.,	.ETAT8	392	19 140	20 10 10 10 10	40	17	26	82 52	18	89	3 %
III.—5. Urinary Organs.  Totals.  Nephritis. S. Ischuria. Nephria (Bright's Disease). Galculus (Stone, Gravel, &c.), G. Cystitis. Totals. Ovarian Dropsy. Diseases of Uterus, &c., III.—7. Organs of Locomotion. Totals. Totals. Methritis. Joint Disease, &c.,* III.—8. Integumentary System. Totals. Totals. Totals. Shin Diseases, &c.,* Shin Diseases, &c.,* Shin Diseases, &c.,* Shin Diseases, &c.,* Shin Diseases, &c.,*		•			•	• •	•		•	•	• •
III.—5. Urinary Organs.  Totals,  Nephritis,  S. Ischuria,  Nophria (Bright's Disease),  G. Cystitis,  Totals,  Ovarian Dropsy,  Diseases of Uterus, &c.,  III.—7. Organs of Locomotion Totals,  Arthritis,  Joint Disease, &c.,  III.—8. Integumentary System Totals,  III.—8. Integumentary System Totals,  Joint Disease, &c.,  III.—8. Integumentary System Totals,  S. Joint Disease, &c.,  III.—8. Integumentary System Totals,  S. Ulcer,		•			• •	• •	٠.	• •		•	• •
III.—5. Urinary Organ Totals,  1. Nephritis, 2. Ischuria, 3. Nephria (Bright's Disease), 4. Diabetes, 6. Calculus (Stone, Gravel, &c., Calculus (Stone, Gravel, &c., Cystitis, 7. Kidney Diseases, &c., 1. Ovarian Dropsy, 2. Diseases of Uterus, &c., 1. Arthritis, 2. Joint Disease, &c.,*  III.—8. Integumentary S. Totals, 1. Phlegmon, 2. Ulcer, 3. Skin Diseases, &c., 3. Skin Diseases, &c., 3. Skin Diseases, &c., 3. Skin Diseases, &c., 3. Skin Diseases, &c., 3. Skin Diseases, &c., 3. Skin Diseases, &c., 3. Skin Diseases, &c., 3. Skin Diseases, &c., 3. Skin Diseases, &c., 3. Skin Diseases, &c.,		718.		٠, ٠	· ans.	٠.	rotion •		ystem .	•	
III.—5. Urinary Totals,  1. Nephritis,  2. Ischuria,  3. Nephria (Bright's Diseas Dischuria,  5. Calculus (Stone, Gravel, G. Cystitis,  7. Kidney Diseases, §c.,  III.—6. Generative Totals,  1. Ovarian Dropsy,  2. Diseases of Uterus, §c.,  III.—7. Organs of L. Totals,  2. Joint Disease, §c.,*  III.—8. Integumenta Totals,  1. Phlegmon,  2. Joint Disease, §c.,*  1. Phlegmon,  2. Ucer,  3. Skin Disease, §c.,*  3. Ucer,	ATE.	Orga	6	ું કું	. Org .		ocou.		ية. ي		
III.—5. Urino Totals, 2. Ischuria, 3. Nephritis, 4. Diabetes, 6. Cystitis, 7. Kidney Diseases, §c., 1. Ovarian Dropsy, 2. Diseases of Uterus, § III.—7. Organs of Totals, 1. Arthritis, 2. Joint Disease, §c.,*. III.—8. Integum Totals, 1. Phlegum Totals, 2. Joint Disease, §c.,*. 3. Skin Diseases, §c.,*.	DE	iry (	Be 2.8	vel,	tive	į	f T		ınta		
III.—5. U Totals,  1. Nephritis,  2. Ischuria,  3. Nephria (Bright,  4. Diabetea,  6. Cystitis,  7. Kidney Diseases,  7. Kidney Diseases,  1. Ovarian Dropey,  2. Diseases of Uterr  III.—7. Orge Totals,  1. Arthritis,  2. Joint Disease, &c  III.—8. Inter  Totals,  1. Arthritis,  2. Joint Disease, &c  III.—8. Inter  Totals,  1. Phlegmon,  2. Ucer,  3. Men.	1	/rino		G.	ge., nera	ર્સ	้ รูนา	*	2	•	• •
III.— Totals, 1. Nephritis, 2. Ischuria, 3. Nephritis, 4. Diabetes, 6. Cysticulus (St 6. Cysticulus (St 6. Cysticulus (St 7. Küney Disea Totals, 1. Ovarian Dre 2. Diseases of 4 III.—7. Totals, 1. Arthritis, 2. Joint Disease III.—8. 3. Skin Disease 8. Skin Disease	UBE	5. 7	iohť	one,	. G	Cter.	Orge		Inte	•	. ર્જ
Total  Total  1. Nephriti 2. Ischuria, 3. Nephria 3. Nephria 6. Cystitia, 6. Cystitia, 7. Kidney 7. Kidney 1. Ovarian 2. Diseases 11. Arthritis 2. Joint Di 11. Phlegmo 2. Ulcet 3. Skin Dis	C₽	[I. 8,		. S	2 6 E	ĞĞ.		seas.	ထို ကိ	'n,	·ease
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			નંલંલ	4.0°, 0°, ₽	:	<del>-</del> 16		48		H c	ရဲ တံ

See Registration Report for the year 1868, page cv.

Including Railroad Accidents.

102 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
11 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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\* Including Disease of Spine, and Hip Disease.

† Not including Metria (Puerperal Fever).

|| Tuder "Otherwise " (V.-1.-6.) are included cases of Death from heat or cold, drinking cold water, exposure, lightning, surgical operations, etc.

TABLE IX.—Concluded.

CAUSES OF DEATH.	.ETATE	eldatamaß	Berkshire.	Loteth	Dukes and Mantucket	Essex.	Frankiin.	Hampden.	-ortidaqmaH	.xsee(pp)M	Norfolk.	Plymouth.	Buffolk	.Tettesorto W
V.—2. Battle.		'	ı	i	1	1	1	1	1	1	1	1	1	'
V.—8. Homicide.	83	ı	တ	67	ı	4	ł	-	1	64	ဧာ	ı	Ħ	<b>∞</b>
V4. Suicide.	91	-	•	60	ı	7	-	9	ı	13	9	4	88	16
V.—5. Execution.	1	ı	ı	ı	1	1	ı	ı	1	1	1	ı	ı	1
V.—6. Violent Deaths, not included above.*	828	-	23	15	-	45	01	16	ខ	55	80	\$	88	40
Sudden, cause unknown,		-	ro	70	1	ı	1	-	-	10	H	60	ı	4
Causes not specified,†	1,324	32	85	118	18	153	88	\$	8	273	98	65	149	179
								_	_	_				

cold, heat, drinking cold water, lightning, surgical operation, and exposure, are classed under "accident or negligence," (V.-1. 6.) As "stricture of the urethra" is almost invariably the result of genorrhea, it is classed as (I.; 2; 2.)—[Dr. FARR.] Note.—Where a person is "found drowned," the case is classed under "accident or negligence," (V.-1. 4.) Cases of death from

\* Beturned as "Casualty."

† Including 83 from "Hemorrhage," 91 from "Tumor," and 49 from "Inflammation."

\* Including Stillborn.

TABLE X .- CAUSES OF DEATH .- COMPARATIVE MORTALITY.

Exhibiting the Number of Deaths from Specified Causes (Nosologically Arranged) during each of the Five Years 1866-67-68-69-70, with the Number of Deaths, annually, to 100,000 of the Population; -also the Number and Percentage of Deaths during the Five Years 1866-70, and during the entire Registration Period of Twenty-nine years and eight months, ending Dec. 81, 1870.

[Still-births included.]

TAGE OF	Twenty- nine Yra. and Eight 1866-70 Mos. end g Dec. 31, 70.	100-00	28.32	23.06 16.74	3.94	27.57	3 to 2	4.43 23.51
PERCENTAGE OF ALL DEATHS.	Five Yrs. 1866-70	100-00	25.58	27.69 16.69	4.05	25.04	3 % %	4.60
TION.		1,945-17	474.56	518-47 288-61	77.88	464.54	6.18	<b>8</b> €
POPULA'	1869.	1,874.79	476.36	555.67 495.63 300.07 278.09	71.96	464.35	8.42	81.00 372.64
00,00	1866.	2,069-33	533-31	555.67 300-07	77.56	520-03	8.30	88.66 400.39
DEATHS TO 100,000 POPULATION.	1966. 1867. 1868. 1869. 1870.	1,854-56	460-04 429-46 504-08 478-08		69.50	34	3.67	81.59 396.47
DEAT	1866.	1,937-44	460-04	507.78 343.64	76.53	452.90	4:24	85.71 418.37
	CAUSES OF DEATH.	All Causes, Specified Causes,*	(CLASSES.) 160,439 I.—Zymotic Diseases, .	180,640 III.—LOCAL DISEASES, 94.864 IV.—DEVELOPMENTAL DIS.	22,317 VVIOLENT DISEASES,		vi esi =	4. Farasinc Diseases, II.—1. Diathetic Diseases, 2. Tubercular Disease,
	Twenty- nive Yra. and Eight Mos. end'g Dec. 31, 70.	590,927 566,525	160,439	130,640 94.864		156,202	421 2,870	5,759 25,077 26,845 133,188
	Five Yrs. nine Yrs. and Eight 1865-69 Mos. end's 10c. 31, 70.	130,611	82,050 89,604	34,702	5,043	31,872	421	5,759 26,845
80		88.32 86,93	<b>U</b> 1.		1,135	6,7	200	1,306 5,879
DEATHS	8. 1869. 1870.	27.148 25,713		7,177	_	6,724		. بي
	1966.	28, 52 33, 53	<b>6</b> ,8	7,157	œ	6,6	108	5.5
. 1	1867.	ងូង ទី		6,343		5,410	4.5	1,046 5,083
	1866.	24,683	5,861	6,469	975	5,770	20.5	1,092 5,330

TABLE X.—Continued.

	İ	1 !	DEATHS	· si					DEATE	S TO 10	DEATHS TO 100,000 POPULATION	POPULA	TION.	PERCEN ALL D	PERCENTAGE OF ALL DEATHS.
1867. 1869. 1869. 1870.	1869.		187		Twenty- nine Yra. nine Yra. 1866-70 Moa. end'g Dec. 31, 70.	Twenty- nine Yrs. and Eight Mos. end'g Dec. 81, 70.		CAUSES OF DEATH.	1866.	1867.	1866.	1966.	1870.	Five Yra. 1666-70	Twenty-? .nine Yra. and Eight Mos. end's Dec. 31, 70.
9.605 2.576	9.605 2.576	2.576		922	12.577	47.836	III.—1.	Diseases of— Nervous System.	183-20	178-31	202-25	177.89	190-48	10-04	8.45
1,013 940	1,013 940	940		801	4,715	16,139						64.91	68-69	3.76	2.85
2,157 2,231	2,157 2,231	2,231		2,185	10,422	38,235				142.35	_	154-07	149.93	8.35	6.75
887 870	887 870	870		987	4,455	20,063		Digestive Organs, .	65-07	68.80	68.87	80.08	67.73	8.28 •	10.
41 46 29	909 46 29	951 29		204	1,244	4,187	က် ဗေ		2.43	3.20	8.57	2.42	20.80	150	4 6
88	88	8		97	431	1,814		_	6.52	90.9	6.4	6.22	99.9	<b>4</b>	25.
63	63	<b>6</b>		- 2 2	871	1,886		Integumentary System	2.89	20.9	4.89	6.22	5.35	65.	<del>လ</del> ဲ့
1,958 2,065	1,958 2,065			18	11,598	56,013	2	Diseases of— Children,.				142.61	145.33		<b>68</b> · <b>6</b>
254	211 254			29	1,121	4,825	7.00 7.00 7.00 7.00 7.00 7.00 7.00 7.00	Adulls,	15.78	15.29	16.38	17.54	17.77		85
1,841 1,809 1,875 1,444	1,309 1,875			4 <del>2</del> <del>2</del>	6,827	30,442		Old People,		104-60	101 62	94.95	99-08	5.45	5.37
100	3			3	1,002	Too's	Ĥ	י דישו שוטוו,	## OT	, B	200	AA.77	24.07	RO.T	ခို
532 610 615 6	615		6	289	8,038	11,746	<b>⊢</b>	Accid't or Negligence,	46.63	41.50	47.86	42 47	47.14	2.43	2.07
T	T			1	_	1,246			ê	T	1	1	1	1	য়
22	22			58	96	384		Homicide,	98	1.17	1.24	1.73	1.99	Ģ.	0.
88	<del>7</del>		<u>پ</u>	=	419	2,048			5 73	5.85	<del>0</del>	6.35	6.24	85	.36
269 288 809 85	308		Š	828	1.485	6.884	် တံ	Viol't D'ihs. not clas'd.	23.23	20.98	21.97	21:34	22.51	1.19	1.99
				==			:		-;	1				1	]   
25 81 23		<u> </u>		97	123	651	Sudden	Sudden (cause unascertain'd),	1.41	1.95	2.41	1.59	1.78	1	1
458 1,438 1,412 1,	1,412	1,412		1,824	5,182	28,751	Causes	28,751 Causes not specified,	48.96	85-83	85.83 111.26	97-51	90.85	<u> </u>	٠

.08 .08 .11 .11 2.23	6.81 .74 .18	-23	4.56 1.26 3.70	<u> </u>	60 - 10
\$ 5.5 8.73 1.19 1.74 1.18		.15	2.59 1.30 5.54 4.6	<b>4</b> 6 4	
8.99 18.46 46.87 16.60 29.78 22.64	91.47 9.06 4.53	2.47	82-82 81-86 131-33 7-84	.76 .41 9.33	2.5 2.0 41. 48.
15.88 97.08 20.44 1.04 32.66		8.38	33.22 21.06 98.34 6.56	.85 .76 7.80	2:34 
1.55 22.28 106.30 23.06 1.32 37.65 19.18		2.25	58·18 22·75 121·20 9·08	-93 1-24 9 94	2.80
15.29 15.18 64.58 19.58 1.01 27.77 23.17	75-27 11-31 8-12	2.03	51.32 21.06 75.34 4.99	1.38	242 08 03 23
11.07 8.56 30.22 31.32 .63 83.83 22.53	85.68 11.54 3.14	3.92	74-49 23-86 84-61 15-07	94 94 10-05	1.33
L—1. Miasmatic. Smallpox, Measles, Scarlatins, Diphtheris, Croup, Whooping Cough,	Typhus (and Inf. Fev.), Erysipelas (& Phlebitis), Metria (Puerp. Fever), Carbuncle,	Influenza,	Dysentery,	Ague,	I—2. Enthetic. Syphilis, Stricture of Urethra,
MAMMOUP			нноо	7 1 1	SOHO
4.01.02.4.70.00. <b>2</b> -	8601	12.	5 4 5 6 1 8	17. 18. 19.	નુ છાં છ <sub>ે.</sub> 4
8,198 1. S 24,532 3. N 6,422 4. I 6,422 4. I 6,608 6. 6	30,093 8 4,166 9 1,031 10 90 11		25,814 13. II 7,182 14. II 20,931 15. C 3,979 16. C	194 17. 7 249 18. I 1,942 19. I	
4.01.02.4.70.00. <b>2</b> -	5,490 80,093 8 773 4,166 9 275 1,081 10 27 90 11	12.	5 4 5 6 1 8	17. 18. 19.	155 465 1. 7 2. 8 2. 25 54 4.
181	30,093 8 4,166 9 1,031 10 90 11	1,318 12.	25,814 13. 7,182 14. 20,931 15. 3,979 16.	194 17. 249 18. 1,942 19.	465 1. 17 2. 28 3. 54 4.
647 8,198 1. 1,081 5,278 2. 4,670 24,532 3. 1,485 6,422 4. 61 627 5. 2,179 12,08 7.	5,490 80,093 8 773 4,166 9 275 1,081 10 27 90 11	190 1,318 12.	3,244 25,814 13. 1,629 7,182 14. 6,943 20,931 15. 575 8,979 16.	5 11 58 194 17. 11 6 62 249 18. 113 186 607 1,942 19.	155 465 1. 7 2. 8 2. 25 54 4.
181	1,838     5,490     30,093     8       132     773     4,166     9       66     275     1,031     10       4     27     90     11	86 190 1,313 12.	471     3,944     25,814     13.       457     1,629     7,182     14.       1,914     6,943     20,931     15.       107     575     3,979     16.	11 53 194 17. 6 62 249 18. 186 607 1,942 19.	38 34 37 155 465 1. 9 - 3 7 17 2. 9 5 5 28 3.
69         181         647         8,198         1.405         688         4,670         24,532         3.9           1,405         688         4,670         24,532         3.           296         242         1,485         6,422         4.           478         434         2,179         5.         4.           320         830         1,481         6,608         7.	1,205 1,838 5,490 80,093 8 188 132 773 4,166 9 1 275 1,031 10 2 275 1,031 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	49 86 190 1,318 12.	481     471     3,244     25,814     13.       305     457     1,629     7,182     14.       1,424     1,914     6,943     20,931     15.       95     107     575     3,979     16.	5 11 58 194 17. 11 6 62 249 18. 113 186 607 1,942 19.	84 87 155 465 1. - 3 7 17 2. 5 5 25 54 4.

### TABLE X.—Continued.

PERCENTAGE OF ALL DEATHS.	Twenty- nine Yrs. and Eight Mos. end'g Dec.31, 70.		- 86 86	2.28 1.31 .63 .20	-52 -98 -20-10 1-91
PERCEN ALL D	Five Yrs. 1868-70	40 60 16 16	10,40		.46 1.02 1840 1.54
LION.	1870.	.14 .89 1.85 3.30	• • • • • • • • • • • • • • • • • • • •	38.98 35.41 11.80 3.16	7.20 24.91 343.29 28.00
DEATHS TO 100,000 POPULATION	1869.	1.52 1.31 1.86 3.73	.28 .62	36.25 38.25 7.94 2.69	7.94 18.17 321.74 24.79
900'00	1868.	1.24 1.40 1.78 3.97	.15	.08 41.92 84.55 8.77 8.34	10.87 18.87 844.49 26.16
IS TO IS	1867.	-39 -55 1-01 1-72	80. 44.	.08 37.98 30.81 8.58 4.14	8·50 13·96 340·24 88·77
DEATE	1966.	.24 .63 1.10 2.27	.16 1.17	.08 42.31 32.65 7.53 8.14	8-63 18-21 361-07 80-46
	CAUSES OF DEATH.	I.—3. Dietic. 1. Privation, 2. Purpura and Scury, 3. Del. Trem., Alcoholism,	I.—4. Parasitic. 1. Thrush, . 2. Worms, &c.,	I.—1. Diathetic. 1. Gout, 2. Dropsy and Anamia, 3. Cancer(& Can. of Stom'h) 5. Mortification,	II.—2. Tubercular. 1. Scrofula,. 2. Tabes Mesenterica,. 8. Phthisis (Consumption), 4. Hydrocephalus,
	Twenty- nine Yrs. and Eight Mos. end'g Dec.31, 70.	198 231 769 1,672	337 466	65 12,943 7,403 3,512 1,154	2,912 5,566 113,914 10,796
	Five Yrs 1866-70	48 65 104 204	10	2,659 2,264 2,264 606 221	. 579 1,280 28,061 1,925
	1870.	13 27 48	H 00	568 516 172 • 48	105 363 5,003 408
DEATHS.	1869.	22 19 27 54	40	525 499 399 399	115 263 4,659 859
	1868.	16 18 23 51	13	113 445 445 483	140 243 4,487 887
	1867.	5 13 22	127	1 487 395 110 53	109 179 4,362 488
	1866.	3 8 14 29	15	539 416 96 40	110 232 <b>4,</b> 600

1:94 :99 :26 :01	62 1.81 1.05	02 02 04 05 05	- 04 - 61 - 53 - 16 - 18 - 28	21 1.08 1.08 0.04 1.00 1.18
25.28 1.26 4.0 01	-51 -06 1-95 1-31	-07 -04 3-65	- 00 88 44 44 44 45	150 150 29 29 66 68 68 74 78
41.24 27.04 43.23 7.07	9.19 1.30 86.16 25.18	1.03 .55 67.11	-82 17.77 5.15 117.89 4.53 8.77	6.18 19.76 5.90 .89 .96 2.68 6.11
89.50 22.86 41.92 6.01		131 .69 62:91	07 .90 .16.51 6.42 119.88 4.63	8.73 15.54 4 97 1.24 1.73 8.11 4.41
44.80 24.15 48.91 7.07	10.40 1.09 38.74 26.78	1.86 .93 75.86	787. 1871 777 128·18 5·82	6.29 19 57 5.20 1.16 2.25 5.66
40.95 21.92 36.58 8.66 8.66	9.67 1.09 37.21 21.92	1.01 .39 68.02	08 1-17 16-22 7-33 107 49 4-29 5 77	6.16 19.89 6.01 6.01 .62 1.33 2.42 8.99
46-70 20-49 38-23 8-32	8:87 1:02 36:50 22:76	1:57 .86 .65:94	.55 15.85 7.22 128.65 2.90 3.69	4.95 18.84 6.10 1.33 1.81 2.35 5.84
System.		Tirculat'n.	y Organs.	Organs.
· · · · ·	18, .	us of (Bs,	iratori  s,	restive
III.—I. Nervous I. Cephalitis, 2. Apoplexy, 8. Paralysis, 4. Insanity,	6. Epilepsy,. 7. Tetanus, . 8. Convulsions, . 9. Brain Diseases, §	II.—2. Organs of ( 1. Pericarditis, 2. Aneurism, 3. Heart Diseases, (	III.—3. Respiratory 1. Epistaxis, 2. Laryngitis, 3. Bronchitis, 4. Pleurisy, 5. Pneumonis, 6. Asthma, 7. Lung Diseases, §	III —4. Digestive 1. Gastritis, 2. Enteritis, 3. Peritonitis, 4. Ascites, 6. Ulceration of In 7. Heus,
10,975   1. Cephalitis, 5,587   2. Apoplexy, 9,663   3. Paralysis, 1,452   4. Insanity, 4.4   5. Chorea,	⊛ <u>≻</u> ∞ ∞	102 2. Aneurism, 15,778 3. Heart Diseases,	11.—3. Respiratory 1	1,182 II —4. Digestive 6,105 2. Enteritis, 907 3. Peritonitis, 198 4. Ascites, 237 5. Ulceration of In 601 6. Hernia,
<b>⊸</b> 0132470	8,537 6 333 7 10,260 8 5,985 9	=-00	H-10189-4-10-6-1-	_ i ci si 4 ri si r.
10,975 5,587 9,663 1,452 445 445	635 8,537 6 78 333 7 2,447 10,260 8 1,634 5,985 9	259 1 102 2 102 2 15,778	12 25 1,149 2,743 3. 1,718 8,122 30,048 5. 65 338 1,450 7.	90 867 1,182 1. 288 1,260 6,105 2. 86 867 907 3. 13 71 198 4. 14 108 237 5. 89 345 1,470 7.
2,870 10,975 1 1,678 5,387 2 2,823 9,663 8 4,98 1,452 4	184 635 8,537 6 19 78 833 7 527 2,447 10,260 8 367 1,634 5,985 9	19 15 91 259 1 10 8 46 102 2 911 978 4,578 15,778	1	367 1,182 1. 1,260 6,105 2. 367 907 3. 71 198 4. 174 601 6. 345 1,470 7.
677         672         601         2,870         10,976         1           811         881         894         1,678         5,587         2           630         607         630         2,823         9,663         3           91         87         108         498         1,452         4           4         4         1         1         44         5	134 180 184 635 8,537 6 14 18 19 78 533 7 499 479 527 2,447 10,260 8 345 851 867 1,634 5,988 9	24 19 15 91 259 1 12 10 8 46 102 2 977 911 978 4,578 15,778	12 25 1,149 2,743 3. 1,718 8,122 30,048 5. 65 338 1,450 7.	81 54 90 867 1,182 1. 252 225 288 1,260 6,105 2. 155 28 1,260 6,105 2. 254 154 108 29 45 39 174 601 6. 73 64 89 845 1,470 7.
672         601         2,870         10,976         1           831         894         1,678         5,587         2           607         630         2,823         9,663         3           87         108         498         1,452         4           1         1         1         44         5	124 134 180 184 635 8,537 6 14 14 18 19 78 533 7 477 499 479 527 2,447 10,260 8 281 345 351 867 1,634 5,985 9	19 15 91 259 1 10 8 46 102 2 911 978 4,578 15,778	1	54     90     367     1,182     1.       225     288     1,260     6,105     2.       72     86     867     907     3.       18     13     71     198     4.       25     14     103     237     5.       45     39     174     601     6.       64     89     345     1,470     7.

TABLE X.—Continued.

	<b>X</b> 2	LIXTH REGISTRATION REPORT.	[1910.
PERCENTAGE OF ALL DEATHS.	Twenty- nine Yra. and Eight Mos. end'g Dec.30, 76.	20   15   60 ii   10 ii ii ii 40 ii ii 10 ii ii 10 ii ii 10 ii ii 10 ii ii 10 ii ii 10 ii ii 10 ii ii 10 ii ii 10 ii ii 10 ii ii 10 ii ii 10 ii	<b>4</b> 4
PERCEN ALL D	Five Tm. 1866-70	\$\frac{2}{2}\displayses	-04 -08
TION.	1870.	257 - 275 - 118 - 1893 11893 1189 - 199 1187 1187 1187 1187 1187 1187 1187 1	1.18
DEATHS TO 100,000 POPULATION.	1869.	6.5 141. 11.911 11.	1.08
00000	1666.		1.78
HS TO 1	1867.	74. 85. 47.8 85.5 11.15 10.5 11.15 1	
DEAT	1566.	.39 .98 .08 .116 .08 .24 .08 .24 .24 .24 .24 .24 .24 .24 .24 .24 .24	-94
	CAUSES OF DEATH.	III.—4. Digest. Organs—Con. 8. Intussusception. 9. Stricture of Intestines, 10. Fistula, 11. Somach Diseases, &c., 13. Hepatitis, 14. Jaundice, 15. Liver Diseases, &c., 16. Spleen Disease, &c., 17. Spleen Disease, &c., 18. Spleen Disease, &c., 19. Spleen Disease, &c., 10. Spleen Disease, &c., 11. Nephritis, 12. Ischuria, 13. Nephritis, 14. Diabetes, 15. Calculus (Gravel, &c.), 16. Cystisis. 17. Kidney Diseases, &c., 17. Kidney Diseases, &c.,	H-3
	Twenty- nine Yrs. and Eight Mos. end'g Dec. 31, 76.	29 29 27 29 27 29 29 29 29 29 29 20 21 25 25 25 25 25 25 25 25 25 25 25 25 25	217 258
	Five Yrs. 1866-70	227 1 207 1 190 1 190 8 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	108
σů	187 0.	88 88 88 88 8 8 8 8 8 8 8 8 8 8 8 8 8	17
DEATES.	1869.	93 2 4 4 5 7 4 9 173 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	1868.	103 103 103 103 103 103 103 103 103 103	
	1967.	11.00 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	1866.	25.00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12

<b>ಕ್ಕೆ</b>	.18 .18	3-25 5-25 06 01 07	94	5.37	<b>.</b>
689	<b>6</b> 65 22	8.88 60 60 1.03 1.03	20.88	5-45	1-09
6.52	4.12 68 55	69-92 50-57 1-65 1-65 1-72 21-13	48	60-66	26.42
. 34 5.86	4.56 90.	75.55 45.92 1.38 1.80 1.7.54	-21 17-84	94.95	22.99
6:44	8.27 1.08	81.52 48.68 1.55 1.55 1.55 18.17	23 16·15	101-62	30 02
-15 5-93	8:98 -62	78-54 113-18 1-32 -47 1-17 21-45	-24 15-05	106-59 104-60 101-62	9-67
6.62	4:24 1:18 47	82-10 108-16 -94 -63 1-73 17-27	-89 15·39	106.59	10-44
III.—7. Organs of Locomot'n. 1. Arthritis, 2. Joint Disease, &c.,*	III.—8. Integumentary System. 1. Phlegmon, 2. Ulcer, 8. Kin Disease, &c.,	IV.—1. Dev. Dis. of Child'n. 1. Stillborn, 2. Infantile, premature, &c., . 3. Cyanosis, 4. Spina Bifida, 5. Other Malformations, 6. Teething,	IV.—2. Dev. Dis. of Adults. 1. Paramenia, 2. Childbirth (excl. Metria),	IV.—3. Dev. Diseases of Old People.  1. Old Age,	IV.—4. Dev. Dis. of Nutri'n. 8,584 1. Atrophy and Debility,† .
1,652	916 251 719	18,377 29,740 309 80 80 88 7,124	59	80,442	8,584
422	273 58 40	5,216 4,858 93 82 108 1,291	1,100	6,827	1,362
82.12	8 0 8	1,019 737 24 5 5 308	7	1,444	385
<b>10</b> 60	99 11 18	1,094 665 20 8 20 265 265 254	<b>3</b> 251	1,875	933
- 188	142	1,050 207 20 20 20 20 20 20 20 20 20 20 20 20 20	208	1,309	387
788	 8 8	1,007 1,451 17 17 15 275	193	1,341	124
1 83	4 75 8	1,046 1,378 12 22 220 220	196	1,358	133

\* Including Disease of Spine, and Hip Disease.

† See Note on page ov.

TABLE X.—Concluded.

CAUSES OF DEATH.   1866.   1867.   1868.   1870.   1870	DEATHS.	DEATHS.	DEATHS.	.81	1				DEAT	18 TO 16	DEATHS TO 100,000 POPULATION	POPULA	TION.	PERCEN	PERCENTAGE OF ALL DEATHS.
V.—1. Accid't or Negligence.  1. Fractures and Contusions, T-54 5-85 5-43 5-73 6-11 33 5-73 6-11 33 5-73 6-11 33 5-73 6-11 33 5-73 6-11 33 5-73 6-11 33 5-73 6-11 33 5-73 6-11 33 5-73 6-11 33 5-73 6-11 1-85 5-85 5-85 5-85 5-85 5-85 5-85 5	1867. 1868. 1870. Five Yr. nine Yr. nine Yr. nine Yr. nine Zir. nine Zir. nine Zir. nine Zir. nine Zir. nine Zir.	. 1869. 1870. Five Tra.	1970. Five Yrs.	Five Yra. 1866-70		Twenty nine Yr and Eig Mos. en Dec. 31,	145.5	CAUSES OF DEATH.	1966.	1867.	1866.	1869.	1870.	Five Vr. 1866-70	Twentv- nine Yrs. and Eight Mos. end's Dec. 31, 70.
3. Doines and Scaud.,	157 168 178	157 168 178	168 178	178				V.—1. Accid't or Negligence.  1. Fractures and Contusions,*	10.52	10.61	•	11.60			_
6. Otherwise,	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	231 288 306 1,289 139 20 30 30 37 139	26 26 124 1289 283 306 1,289 71 135	26 124 806 1,289 130	1,289	_ニニ-	9		17:42	19-27	•	19:54 19:54		. <b>-</b>	2.07
V.—2. Baule.	98 25 61	98 25 61	25 61	91	307	_			7.07	2:08	7.61	1.73		18	
V.—3. Homicide.       ·86       1·17       1·24       1·73       1·99       ·07         V.—4. Suicide.†       5·73       5·85       6·83       6·35       6·24       ·33         V.—5. Execution.       -       -       ·16       ·07       -       -         V.—6. Viol. D'ths, not clas'd.       23·23       20·98       21·97       21·34       22·51       1·19         Sudden, cause unascertained,       1·41       1·95       2·41       1·59       1·78       -         Causes not specified,‡       ·       43·96       35·38       111·26       97·51       90·85       -	1 1,246	-   1 1,24	- 1 1,24	- 1 1,24	1 1,24	1,24	9	V2. Battle.	80·	ī	ı		1	'	-22
V.—4. Suicide.†       5.73       5.85       6.83       6.35       6.24       .33         V.—5. Execution.       -       -       -16       ·07       -       -       -16       ·07       -         V.—6. Violt D'ths, not clast.       23.23       20.98       21.97       21.34       22.51       1.19         Sudden, cause unascertained, cause not specified, to a specified, to	15 16 25 29 96 884	16 25 29 96	29 86	29 86		88	4	V.—3. Homicide.	98.	1.17	1.24	1.73	1.99		-01
V.—5. Execution.  V.—6. Violt D'ths, not clas'd.  Sudden, cause unascertained,  Causes not specified,‡  V.—7. 6. 0. 1.6 1.9 1.9 1.9 1.9 1.5 1.9 1.5 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	75 88 92 91 419 2,048	88 92 91 419	92 91 419	91 419		2,04	00	V4. Suicide.	5.73	5.85	6.83	6.35			-36
V.—6. Viol't D'ths, not clas'd. 23.23 20.98 21.97 21.34 22.51 1.19 Sudden, cause unascertained, 1.41 1.95 2.41 1.59 1.78 -  Causes not specified, 43.96 35.33 111.26 97.51 90.85 -	2 1 3				တ		6	V.—5. Execution.	ı	1	.16	20.	1	'	ı
Sudden, cause unascertained, 1.41 1.95 2.41 1.59 1.78 – Causes not specified, † 43.96 35.33 111.26 97.51 90.85 –	269 283 309 328 1,485 6,884	283 309 328 1,485	328 1,485	1,485		8,8	48	V6. Viol't D'ths, not clas'd.	23.23	20-98		21.34	22.51	1.19	1.22
Causes not specified, ‡ 48.96 35.38 111.26 97.51 90.85 -	25 81 28 26 123 66	81 28 26 123	26 123	26 123		9	651	Sudden, cause unascertained,		1.95	2.41	1.59	1.78		ı
	458 1,438 1,412 1,324 5,182 23,751	1,438 1,412 1,324 5,182	1,324 5,182	1,324 5,182		23,78	-12	Causes not specified,	43.96		111.26	97-51	90.85		1

### NOTE.

Previously to the adoption, in the Registration Report of 1855, of the present Nosological Arrangement of Tables IX. and X., the term "Infantile" in those Tables included, under a single designation, not only all deaths returned under the several heads "Infantile," "Premature," or "Premature Births," but also all ascribed to "Debility" or "Unknown" causes, if under two years of age.

This plan was continued until the Registration Report of 1868, in which, to secure greater accuracy, the method now employed was adopted, by which Deaths returned under the head of "Premature," "Premature Births," or "Infantile," are stated separately in Table VIII. and combined in Tables IX. and X. Deaths of children under two years, from "Debility" or "Unknown" cause, are no longer classed as "Infantile."

See Registration Report of 1868, p. cv., for a fuller explanation.

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## TABLE XI.—OCCUPATIONS.

Distinguishing by Occupations (statistically classified) the Number, with their Average and Aggregate Ages, of Persons in the State (in two geographical divisions) whose Occupations were specified, and whose Deaths were registered, during the year 1870;—also in the State (entire) during the period of Twenty-seven Years and Eight Months, ending with December 31, 1870.

50.87 13.46 47.04 85.14 49.23 50.72 WHOLE STATE, Twenty-seven Years and Eight Mos. From May 1, 1843, to Dec. 31, 1870. Average. 45.94 AGES. 590,904 203,880 597,559 88,863 Aggregate. 5,897,081 1,759,353 449,126 612,331 ,044,625 338,859 211,581 Number of 27,068 115,922 8,547 12,783 13,594 22,209 5,802 7,376 12,138 2,234 Persons. 4,171 53.34 **47.08** 89-59 65.52 57.57 46.79 88.00 45.67 18-91 A verage. FIVE WESTERN COUNTIES, AGES. Aggregate. 1870. 87,896 3,153 2,878 36,693 5,872 10,949 7,308 13,137 1,821 6,440 This Table includes only persons over twenty years of age.\*] Number of 1,648 102 234 156 279 සි 111 Persons. 51.2953.18 48-62 44 79 48.69 43 45 47·78 68.79 53.31 NINE EASTERN COUNTIES, Average. AGES. Aggregate. 39,146 20,102 26,470 36,575 6,652 6,450 236,485 27,471 7,301 15,087 51,231 1870. 4,612 Number of 1,052 135 187 Persons. VIII. MERCHANTS, FINANCIERS, AGENTS, &C., IV. INACTIVE MECHANICS IN SHOPS, . V. LABORERS-No SPECIAL TRADES, III. ACTIVE MECHANICS IN SHOPS, I. CULTIVATORS OF THE EARTH, VI. FACTORS LABORING ABROAD, II. ACTIVE MECHANICS ABROAD, ALL CLASSES AND OCCUPATIONS, . VII. EMPLOYED ON THE OCEAN, . OCCUPATIONS. IX. PROFESSIONAL MEN, X. FEMALES,

1870	.]								(	0	CC	UI	PAT	ю	N	З.											C1
64-99	52.54	48.36	58-00	58-49	50-41	57.81	51-59	<b>67.79</b>	40.91	46.69	49-26		47.90	46.22	58.21	48.18	48.68	52.11	46.28	49 44	41.18	58.07	43.71	39.68	59-51	46.92	
1,759,358	449,126	8,966	257,489	8,951	63,678	5,784	6,914	42,184	1.759	84,510	23,891		612,331	17,609	105,232	1,080	29,263	469	1,619	10,382	4,158	4,239	2,704	3,411	47,255	3,661	
27,068	8,547	<b>28</b>	4,818	153	1,263	100	134	730	43	739	485		12,783	381	1,977	83	109	6	35	210	101	73	83	98	794	78	
65-52	22-29	1	56 84	ı	60-41	61.50	1	ı	ı	58-71	22-99		46.41	ı	58-35	1	43.83	1	ı	54.20	32 71	66.75	24.00	35.00	80.75	1	
89,68	5,872	ı	3,979	. 1	725	123	ı	1	1	822	223		10,949	1	1,342	1	280	ı	ı	27.1	558	287	24	105	323	1	
200	102	•	2	ı	12	cı	ı	1	•	14	4		284	1	83	ı	8	1	ı	10	۲	4	-	æ	4	1	
88.78	53.18	49-00	53.14	53.71	51.77	75.00	56.40	62-65	38-80	48-33	47.29		48.62	47.30	58-31	32.20	42-27	ı	67-00	20.78	48.50	ı	48.60	41-60	81.98	47.50	=
89,146	20,102	48	10,894	376	3,365	75	282	2,506	194	2.030	331		27,471	1,088	3,557	65	1,099		67	457	26	1	248	208	1,487	95	
269	378	-	202	7	65	-	•	40	2	42	2		282	83	. 61	63	56	1	_	8	61	١	20	ĸ	24	<b>C1</b>	_
•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	_
•	•		•	•	•	•	•		•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	
L CULTIVATORS OF THE EARTH,	II. ACTIVE MECHANICS ABROAD,	Brickmakers,	Carpenters and Joiners,	Caulkers and Gravers,	Masons,	Millwrights,	Riggers,	Ship-carpenters.	Slaters,	Stonecutters.	Tanners,		III. ACTIVE MECHANICS IN SHOPS,	Bakers,	Blacksmiths,	Brewers,	Cabinet-makers,	Calico-printers,	Card-makers,	Carriage-makers and trimmers,	Chair-makers,	Clothiers,	Confectioners,	Cooks,	Coopers,	Coppersmiths,	

\* Soldiers and females excepted.

### TABLE XI.—Continued.

•		NINE E	NINE EASTERN COUNTIES,	UNTIES,	FIVE W	FIVE WESTERN COUNTIES, 1870.	NTIES,	WE Twenty-seve From May	WHOLE STATE, Twenty-seven Years and Eight Mos. From May 1, 1848, to Dec. 31, 1879.	ight Mos. 31, 1870.
OCCUPATIONS.		No.	AGES.	si	Namber of	A 0 E8.		Number of	AGES.	
		Persons.	Aggregate.	Average.	Persons.	Aggregate.	Average.	Persons.	Aggregate.	Average.
								3	300	1
Curriers,	•	28	1,130	38-97	1	1	1 9	2117	8,805	41.73
Cutlers	•		25	25.00	2	835	47.85	103	4,076	39.75
Distillera	•	အ	176	28.67	ı	1	1	27	1,585	28.70
Dyare	•	4	201	50-25	67	42	39.50	116	5,105	44.00
Founders	•	Z	282	56.40	63	16	45 50	244	10,483	42.98
Furnacemen	•	16	878	42.25	9	170	28.33	111	4,640	41.80
Close-blowers	•	4	173	43.25	ı	ı		109	4,122	37.81
Cunamithe	•	ı	)	1	21	624	62.40	539	11,649	48.74
Hatters	•	10	566	56 60	တ	179	29-66	296	16,327	55.16
Leather-dressers	•	15	980	46.00	)	•	,	128	5,980	46.56
Machinista	•	65	2,988	45.97	27	1,037	38-41	1,572	64,002	40.71
Miller	•	00	367	45.88	9	247	41.16	234	13,547	57 89
Musical Instrument-makers	•	. 1	•	1	63	109	24.50	17	787	46.88
	•	9	342	22-00	ł	ı	ı	151	6,170	40 86
Pail and Tub-makers.	•	1	,	ı	ı	,	t	4	158	39.20
Painters.	•	87	8,729	45.87	55	1,022	46.45	1,353	61,529	45 48
Paper-makers.	•	က	165	55.00	10	527	52.70	225	10,703	47.57
Pianoforte-makers.	•	9	320	53.33	01	06	42.00	33	3,493	42.59
Plumbers	•	9	215	35.83	1	ı	ı	88	3,010	36.56
Potters	•	,	ı	1	1	,	ı	37	1,961	22.67
Pumn and Block-makers.	٠. •	တ	201	92.00	1	ı	•	75	4,227	56.36
! ! .		•	ı	,	ı	•	1	6	385	42.78
Rone-makene.		11	202	64-27	1	ı	1	221	12,883	57.84
Tollow-ohendlow	• •	63	86	49.00	,	ı	1	61	8,358	52.05
		_	-							

		_																										
40.85	89.55	45.58	56.26	51.56	44.77	 43.46	40.99	63.08	39 80	43.05	33.35	87.82	67.58	50.49	40.23	43.82	47.94	41.00	38.84	98.06	. 51.95	41.59	43.95	46.34	46.02	50.50	41.98	47.58
12,255 1,451	3,639	14,954	24,023	2,939	63,033	590,904	11,682	3,974	4,697	1,808	2,235	4,274	8,857	5,655	3,661	2,191	16,012	14,888	55,780	20,669	9,300	10,150	352,593	3,337	53,063	2,020	3,399	5,659
	65	328	427	22	1,408	 13,594	285	63	118	42	42	113	49	112	91	20	334	363	1,436	543	179	244	8,022	72	1,153	40	81	119
45.48	82.00	47.92	62.80	,	41.54	46.81	41.00	ı	65.00	52.00	1	82.50	83.00	86.25	28.00	,	54.50	46.16	41.48	29.50	,	ı	45.82	48.00	58.70	1	52.28	21.50
818	87	623	314	1	2,326	7,308	88	ı	130	104	ı	65	88	265	28	,	218	277	1,369	28	ı	,	3,528	48	287	ı	887	<del>4</del> 3
<b>-</b> 1:	<b>-</b>	13	Ö	1	92	156	67	ı	01	C3	ı	cs.	-	4		1	4	မ	88	63	 !	1	11	-	01	ı	-	<b>C3</b>
40.00 54.00	47.16	65.00	63.73	48.33	47.24	44.79	45.41	60-50	83.14	48.00	32.67	41.78	,	,	43.83	48.57	45.87	44.00	39-46	33.70	56.17	42.22	47.03	45.50	49.94	20.00	ı	41.00
108	283	195	926	290	8,685	26,470	722	121	232	48	86	878	ı	ı	263	840	734	1,012	4,104	910	674	260	12,792	91	2,847	100	ı	246
===	٥	<b>\$</b>	12	9	42	 591	17	SI	_	-	တ	æ	1	1	0	7.	16	83	104	52	12	18	272	cs.	22	Ø		9
•. •	•	•	•	•	•	•	•	•	•	•	•	•	•	. •	•	•	:	. •	•	•	•	•	•	•	•	•	•	•
• •	•	•	•	•	•	δυ	•	•	•	•		•	•		•	•	•	. •	•	•	•	•	•	•	•	•	•	
	•	•	•	•	•	Ѕнорв,	•	•	•		•	•		•	•	•		•	•	•	•	•	•		•	•		
	•	•	•		ਰੰ		•	•	•			•	•	•		•	•	•	•	•	•		•	•	•			•
	•	•		•	pecified	HANICS IN			•				ac	. •				. •				•					•	
	•			•	-	_	•		•				nakers													•		
٠.				•	ade n	VE D	•	:	. •				tch-n	•	•		r.		•		•			•			•	
Tinsmiths, Trunk-makers	Upnoisterers,	Weavers, .	Wheelwrights,	Wood-turners,	Mechanics (trade not	IV. INACTIVE ME	Barbers, .	Basket-makers	Book-binders,	Brush-makers,	Carvers, .	Cigar-makers,	Clock and Watch-ma	Comb-makers,	Engravers,	Glass-cutters,	Harness-makers	Jewellers, .	Operatives,	Printers,	Sail-makers,	Shoe-cutters,	Shoemakers,	Silversmiths,	Tailors, .	Tobacconists,	Whip-makers,	Wool-sorters,

### TABLE XI.—Continued.

Number of Person.   Number of Person.   Person.   Person.   Person.   Person.   Person.   Person.   Person.   Person.   Person.   Person.   Person.   Aggregate   Avange.   Av		NINE EA	NINE EASTERN COUNTIES, 1670.	DE8,	FIVE W	FIVE WESTERN COUNTIES. 1870.	INTIES,	W Twenty-ser From May	WHOLE STATE, Twenty-even Years and Eight Mos. From May 1, 1843, to Dec. 31, 1879.	ght Mos. 31, 1870.
BORERS—No Special Trades, . 1,052 51,231 48-69 279 18,187  ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '		Number of	AGES.		Tumber of	AGM		Number of	A GES.	
BORERS—No Special Trades, 1,052 51,231 48.69 270 18,187  ,		Persons.			Persons.	Aggregate.	Average.	Persons.	Aggregate.	Average.
in powder-mills,		1,052		69-	279	18,187	47.08	22,209	1,044,625	47-04
in powder-mills,	Laborers,	1,015		86.	27.5	12,961	47.18	21,690	1,021,637	47.10
in powder-mills,	Stevedores,	å iè		18	1 1	1 1	1 1	160	8,508	52.35
in powder-mills,	Watchmen,	<b>-</b>		ş	<b>60</b>	184	44.68	136	6,600	48.53
asters,	Workmen in powder-mills,	ı	1	1	<del></del>	42	45.00	81	714	89-68
asters,										
asters,	•	168		45	48	1,821	39-59	5,802	203,880	85-14
# 189 8475 7 193  ##eepers.	Вастасе-тавтега,	~		Ş	1	ı		27	866	82.07
weepers.     15     794     52.93     6     262       sand Firemon,     17     699     41.12     8     120       n,     27     1,114     41.27     10     872       n,     12     27.00     27.00     2.       n,     12     27.00     2.     2.       n,     12     502     41.83     2.       n,     12     502     44.83     2.       n,     13     582     44.77     6     2.88       n,     10     51.00     1     75	Brakemen,	4		12	-	193	27.57	. 142	3,914	27.57
weepers,     17     69     41.12     8     120       and Firemen,     27     1,114     41.27     10     872       n,     12     502     41.83     2     71       n,     12     502     41.83     2     71       n,     13     582     44.77     6     288       10     51.00     1     75	Butchers,	15		.93	0	262	43.66	400	20,102	50-25
and Firemen,	Chimney-sweepers,	1		-	ı	1	ı	4	138	34.50
and Firemen,	Drivers,	17		-12	တ	120	40.00	228	9,126	<b>4</b> 0.02
and Firemen,	Drovers,	_		<u> </u>	•		ı	15	736	49.08
n,	nd Fire	27		-51	10	872	37.20	874	14,145	37 82
e keepers,	Expressmen,	12		<u> </u>	<b>~</b>	17	35.50	160	6,463	40.89
a keepera,	Ferrymen,	1	ı	,	1	ı	1	6	484	53.77
	Light-house keepers,	1		•	1	1	1	6	531	69.00
2 102 51:00 1 75	Peddlors,	13		-11	•	288	88.83	808	13,441	44.86
	Sextons,	61		\$	-	76	26 00	69	8,472	58 84
00   2   00   2   00	Soldiers,	_ 2 _		— 06:	61	28	22-00	2,864	81,045	28-29

•				
42·15 39 99 58·57 49·48	45.94	42.95 41.25 47.95 59.76 45.91	49-23	48.25 58.30 58.30 58.35 58.35 40.00 47.74 49.73 49.02 58.85 49.02 49.02 49.02 49.03 40 40 40 40 40 40 40 40 40 40 40 40 40
11,086 86,284 1,058 1,058	838,859	11,988 165 1,918 4,124 820,669	597,559	8,879 2,099 6,089 2,442 3,681 7,296 7,205 88,246 17,718 19,095 19,005 19,005 19,005 19,005 19,005 19,005 19,005 19,005 19,005 19,005 19,005 19
268 906 18 21	7,876	279 4 40 69 69 6,984	12,138	184 86 115 52 69 152 172 1,22 871 871 1,079 1,079 1,079 1,079 1,079 1,079 1,079 1,079 1,079 1,079
50.00 51.86 - -	88-00	1 1 1 2 90.98	45.67	53.50 65.00 65.00 65.00 72.80 72.80 72.80 72.80 72.80 72.10 72.80 72.10
883 1	152	152	6,440	642 65 124 114 119 864 110 864 110 110 110 110 110 110 110 110 110 11
при І	4	1114	141	3,52,53,53,53,111,122
49-80 43-94 51-00	53.81	45-91 - 78-50 53-42	49-83	24 40 63-66
2,417 5,417 51	15,087	1,056 - 157 18,874	36,575	888 191 722 722 722 806 6,122 643 4,055 1,478 649 8,006 10,318 10,318
1 1 55 1	283	78 1 1 28 78 2 1 1 28	784	20 104 194 111 181 181 181 181 101
• • • •	. •			
	•		TB, &	• • • • • • • • • • • • • • • •
• • • •	ž		AGEN	
	Ocean,		'inanciers, Agents, &c.,	
	тик (		NOIT	ers,
· · · · · · · ·			-	oers,
 Gaug	YED		LNT9,	keel keel keel keel keel keel keel keel
and .	KPLO	ricers,	RCHA	cers, house house and Box and b, ir, ir, ir, ir, ir, ir, ir, ir, ir, ir
Stablers,	VII. Employed on	Fishermen, Marines, . Naval Officers, Pilots, . Seamen, .	VIII. MERCHANTS, ]	Agents, Bankers, Bank Officers, Boarding-house keepe Booksellers, Clerks and Book-keep Druggists and Apothe Gentlemen, Grocers, Manufacturers, Manufacturers, Merchants, Merchan
Stablers, Teamstor Weigherr Wharfing	¥	Fisherm Marines, Naval O Pilots, Seamen,	VIII	Agents, Bankers, Bank Off Bank Off Boarding Bookselle Brokers, Clerks an Cruggist Groens, Inn-keept Manufact Merchan News-des

TABLE XI.—Concluded.

				NINE EA	NINE EASTERN COUNTIES, 1670.	onties,	FIVE W	WESTERN COUNTIES.	UNTIES,	WE Twenty-sev From May	WHOLE STATE, Twenty-seven Years and Eight Mos. From May 1, 1843, to Dec. 31, 1870	lght Mos. 31, 1870.
OCCUPATIONS.				Number of	AGES.	9	Number of	AGES	•	Number of	A GES.	
				Persons.	Aggregate.	Average.	Persons.	Aggregate.	Average.	Persons.	Aggregate.	A verage.
Strvandoolows				-	53	53.00				19	543	45.95
Tolomonhom	•	•	•	1	3	3			)	1	110	90.75
Traders,	• •			130	6,756	51.97	1 20	287	41.00	2,292	109,584	47.81
IX. Professional Men, &c.,			•	135	6,450	47.78	61	8,153	51-69	4,171	211,581	50.72
Architects.	•		_	-	50	20.00	,	ı	,	15	784	52.28
Artists	•		•	10	398	39-80	4	162	40.50	136	6,066	44.60
Civil Engineers,	•		-	•	1		က	121	40.33	83	3,854	41-44
Clergymen,	•		•	88	1,849	66.04	14	748	53.43	771	44,892	58.22
Comedians,	•		•	ı	. 1	1	,	1	ı	28	1,006	85.93
Dentists,	•	•	-	80	280	46.67	61	71	35.50	88	8,836	41.24
Editors,	•		•	က	263	52.60	ı	ı	1	49	2,214	45.19
Judges and Justices	•		•	ı	ı	1	-	57	24.00	16	1,049	<b>65.66</b>
Lawyers,	•		•	15	888	89-88	7	424	29.09	565	31,849	56.37
Musicians,	•	•	•	20	488	48.80	2	232	46-40	198	8,158	41.20
Photographers,	•		•	ı	ı	•	,	1	ı	က	130	43.33
Physicians,	•	:	•	83	397	17.26	14	837	82.69	920	53,658	55.31
Professors.	•		•	61	99	33.00	-	48	48.00	84	1,866	54.88
Public Officers,	•		•	14	746	54.57	63	114	22 00	876	20,611	54.81
Sheriffs, Constables, and Policemen,	en,		•	<b>∞</b>	430	53.75	-	51	51.00	94	5,116	54.43
Students,	•		•	ဘ	20	23.33	ဆ	65	21.66	236	5,542	23.48
Surveyors,	•		•	1	,	1	_	91	91.00	69	3,618	52.48
Teachers,	•		-	 2	244	64.40	 8	135	42.00	425	17,332	40.18

X. Females		,	•	•	•	187	8,652	48.66	8	2,876	87.71	2,284	88,868	89-77
Domestics,				•	•	96	4,770	50-21	10	281	28.10	515	24,392	47.86
Dressmakers,				•	•	10	183	86-60	4	202	20.20	187	7,892	42.20
Milliners, .				•	•	_	8	20.00	H	88	83.00	100	8,873	88.73
Nurses,				•	•	10	643	64.30	'n	281	46 20	98	5,228	80.73
Operatives,				•	•	4	219	54.75	15	516	34.40	517	14,684	28.40
Seamstresses,				•	•	4	208	52.25	6	425	47.22	-236	11,018	46 68
Shoe-binders,				•	•	1	1	1	1	1	1	37	1,622	43.83
Straw-workers,				•	•	i	,	i	C)	48	24 50	90	2,122	35.37
Tailoreses,	_		•	•	•	<u>හ</u>	135	45.00	က	167	22.66	183	8,413	45.97
Teachers, .				•	•	15	478	81.53	14	472	33.71	811	9,582	80.81
Telegraphers,				•	•	<u>'</u>	1	ı	,	١	ı	63	42	21.00
		1									_			

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### TABLE XII.—GENERAL ABSTRACT

Exhibiting the Number of Births, Marriages, and Deaths, registered Years, 1865–70,—in connection with the Population, accord-of Children Born and of Persons who died;—also showing the Deaths, to the given Population.

						BIRTH	3.		
THE STATE AND C	'onw	TTRE	Population. U. S. Census			SEX.		BA	mo.
			1870.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
MASSACHU	SE I	TS,	1,457,851	209,989	107,856	101,805	<b>32</b> 8	2.40	42
Barnstable,		•	82,774	4,413	2,267	2,119	27	2.24	45
Berkshire,	•	•	64,827	9,226	4,841	4,366	19	2.87	42
BRISTOL, .	•		102,886	14,838	7,445	6,852	41	2.82	43
Dukes, .	•		3,787	882	187	192	8	1.68	60
Essex, .		•	200,843	27,149	14,161	12,937	51	2.25	44
Franklin,	•		32,635	3,697	1,897	1,794	6	1.89	53
Hampden,	•		78,409	11,158	5,706	5 <b>,4</b> 33	19	2.87	42
Hampshire,			44,888	5,808	8,028	2,772	8	2·18	46
Middlesex,	•		274,353	38,426	19,658	18,713	55	2.83	48
Nantucket,	•	•	4,128	818	178	139	1	1.28	78
Norfolk, .			89,443	16,224	8,214	7,976	84	8.02	33
Plymouth,			65,865	8,897	4,606	4,276	15	2.27	44
Suffolk, .			270,802	42,151	21,456	20,689	6	2.60	89
Worcester,			192,716	27,802	14,212	18,547	43	2.40	41

### FOR THE SIX YEARS-1865-70.

in the several Counties and Towns of Massachusetts, for the Six ing to the United States Census of 1870,—distinguishing the Sex Ratios of the annual average number of Births, Marriages, and

	MARRIAGI	s.			DEAT	THS.		
	RA	TIO.			SEX.		RA	710.
Couples.	Marriages to 190 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
85,333	• <b>9</b> 8	102	151,547	75,383	75,920	244	1.74	58
1,992	1.01	99	3,097	1,580	1,497	20	1.57	68
3,415	-88	114	5,758	2,919	2,804	80	1.48	68
5,708	-93	108	10,589	5,238	5,286	15	1.71	59
201	-88	113	878	199	174	-	1.64	61
11,962	-99	101	19,880	9,742	10,100	38	1.65	61
1,721	-88	114	8,102	1,446	1,647	9	1.58	68
4,811	1.02	98	7,959	4,002	3,943	14	1.69	59
2,576	-97	103	4,103	1,979	2,108	16	1.54	65
14,526	-88	113	27,671	18,510	14,138	28	1.68	60
255	1.03	97	580	276	304	-	2.84	43
4,974	-93	108	10,359	5,047	• 5,294	18	1.93	52
8,434	-88	114	6,664	3,350	3,295	19	1.70	59
19,165	1-18	85	82,865	16,526	15,832	7	2.00	50
10,598	-92	109	19,102	9,569	9,498	85	1.65	61

TABLE XII.—General Abstract

					BIRTH	3.		
Counties and Tow	ne.	Population. U. 8. Census			SEX.		RA	rio.
Oblinates and 2011		1870.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Perso livin to on Birti
BARNSTABLE CO	., ,	32,774	4,413	2,267	2,119	27	2.24	4
Barnstable, .		4,793	478	215	252	11	1.66	6
Brewster, . ,		1,259	161	98	63		2.13	1 4
Chatham.		2,411	369	182	187	l _	2.55	3
Dennis,		8,269	458	221	237	_	2.34	4
Eastham	•	668	81	47	34		2.02	4
Falmouth,	•	2,237	198	101	96	1	1.47	6
	•		478	263		2	2.56	3
Harwich,	•	3,080			208	1 -		
Mashpee,*. ,	•	348	4	2	2	-	1.14	8
Orleans, .	•	1,323	170	83	87	=	2.14	4
Provincetown, .	•	3,865	671	360	310	1	2.89	9
Sandwich,	•	3,694	565	301	264	-	2.55	3
Truro,	•	1,269	200	92	108	-	2.62	3
Wellfleet,		2,135	288	135	141	12	2.25	4
Yarmouth,	•	2,423	297	167	130	-	2.04	4
Berkshire Cour	NTY,	64,827	9,226	4,841	4,366	19	2.37	4
Adams,		12,090	1,967	1,081	930	6	2.71	8
Alford,		430	51	28	28	-	1.98	5
Becket		1,346	168	86	80	2	2.08	4
Cheshire,	•	1,758	239	117	121	1	2.27	4
Clarksburg, .		686	78	37	41	_	1.89	
Dalton,		1,252	167	87	80	_	2.23	4
Egremont		931	88	39	49	_	1 59	i
Florida.	•	1.322	202	108	93	1	2.54	3
	•	4.320	547	290	257	-	2.11	4
Great Barrington,	•	882	64	35	29	-	1.20	8
Hancock,	•		293			-	2.88	
Hinsdale,	•	1,695		157	136	-		1
Lanesborough, .	•	1,893	275	138	187	-	3.29	8
Lee,	•	3,866	586	307	279	-	2.52	1 8
Lenox,	•	1,965	296	156	140	-	2.51	4
Monterey,	•	658	74	31	42	1	1.89	
Mt. Washington,	•	256	11	5	6	-	.73	18
New Ashford, .		208	31	17	14	-	2.48	4
New Marlborough	۱, .	1,855	287	165	122	i -	1.36	1
Otis,	•	960	85	48	37	-	1.48	•
Peru,		455	60	33	27	-	2.20	4
Pittsfield,		11,112	1,717	894	821	2	2.58	3
Richmond,		1.091	112	49	68	_	1.71	1
Sandisfield,	:	1,482	110	52	58	_	1 24	
Savoy,		861	100	55	45	_	1.94	
Sheffield.	•	2.535	427	289	186	2	2.81	
Stockbridge, .	•		195	106	89	_	1.62	
Tomin above	•	2,003				-		
Tyringham, .	•	557	104	52	52	-	3.11	1

<sup>•</sup> One year only. Incorporated 1870.

for Six Years-Continued.

1,992 260 76 138 216 35 102 277 1 96 286 217 68 112 110	Marriages to 100 Persons.  1.01	Persons living to one Marriage.  99 110 99 105 91 114 132	8,097 885 139 223	Males.  1,580  148 69	SEX. Females. 1,497 186	Unk.	Deaths to	Persons living to one Death.
1,992 260 76 138 216 35 102 277 1 96 286 217 66 112	1.01 .90 1.01 .95 1.10 .87 .76 1.50	99 110 99 105 91 114	8,097 885 139 223	1,580 148	1,497	20	100 Persons living.	living to one Death.
260 76 138 216 35 102 277 1 96 286 217 66 112	.90 1.01 .95 1.10 .87 .76 1.50	110 99 105 91 114	885 189 223	148			1.57	69
76 138 216 35 102 277 1 96 286 217 66 112	1·01 ·95 1·10 ·87 ·76 1·50	99 105 91 114	189 223		188			, vo
138 216 35 102 277 1 96 286 217 66 112	95 1·10 ·87 ·76 1·50	105 91 114	223	69	1 100	1	1.17	86
216 35 102 277 1 96 286 217 66 112	1·10 ·87 ·76 1·50	91 114	223		70	i –	1.85	54
35 102 277 1 96 286 217 66 112	·87 ·76 1·50	91 114		110	112	1	1.55	65
102 277 1 96 286 217 66 112	76 1·50		303	150	150	3	1.55	65
102 277 1 96 286 217 66 112	76 1·50		62	37	25	_	1.55	65
277 1 96 286 217 66 112	1.50		211	116	95	_	1.57	64
1 96 286 217 66 112		67	273	139	181	3	1.48	68
96 286 217 66 112	-29	348	8	1	7	_	2-30	44
286 217 66 112	1.21	83	181	90	91	_	2-28	44
217 66 112	1.23	81	343	195	147	1	1.48	68
66 112	·98	102	414	284	179	ī	1.87	54
112	-87	115	134	69	65	1	1.76	57
	-88	114	246	117	125	4	1.92	52
	·76	132	240 225			6		
	-10	102	220	105	114	0	1-55	65
3,415	-88	1,14	5,753	2,919	2,804	30	1.48	68
761	1.05	95	1,068	552	516	-	1.26	79
21	·81	123	54	88	21	-	2-08	48
61	•76	132	100	42	58		1.23	81
90	·85	117	111	54	55	2	1.05	95
17	•41	242	38	22	16	-	.92	108
67	-89	112	114	55	58	1	1.52	66
62	1.11	90	66	38	28	-	1.18	85
24	•80	383	117	79	37	1	1.47	68
236	·91	110	401	177	224	-	1.54	65
10	1.89	53	49	23	26	_	-92	108
105	1.03	97	170	86	84		1.67	60
61	.73	137	103	54	48	1	1.28	81
257	1.11	90	501	233	268	-	2.17	46
63	·53	187	137	67	68	2	1.16	8 <b>6</b>
42	1.07	93	71	87	34	-	1.82	55
6	∙39	256	18	13	. 5	-	1.18	85
10	·80	125	11	8	3	_	-88	113
66	•59	169	147	82	65	_	1.33	76
52	-90	111	91	44	47	_	1.59	63
22	·81	124	63	28	84	1	2.81	43
<b>6</b> 81	1.02	98	1,025	520	495	10	1.54	65
29	-44	226	62	82	29	1	•94	106
79	-89	113	101	52	49		1.14	88
60	1.16	86	85	44	41	_	1.64	61
185	-88	118	291	145	145	1	1.92	52
106	-88	113	154	81	73	_	1.28	78
36	1.08	93	82	87	45	_ [	2 46	41

TABLE XII.—General Abstract

				BIRTHS	3.		
Counties and Towns.	Population. U. S. Census			SEX.		Ra	<b>T</b> 10.
,	1870.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Personal living to one Birth.
Berkshire—Con.							
Washington, .	. 694	51	29	22	-	1.21	82
West Stockbridge,	.   1,924	315	163	152	-	2.73	87
Williamstown, .	. 3,559	467	249	214	4	2.19	46
Windsor,	. 686	59	88	21	-	1.43	70
BRISTOL COUNTY,	. 102,886	14,338	7,445	6,852	41	2.82	43
Acushnet,	. 1,132	149	86	63	-	2.19	46
Attleborough, .	. 6,769	1,621	808	806	7	4.00	25
Berkley,	. 744	55	30	25	-	1.23	81
Dartmouth, .	. 3,367	417	209	208	-	2.07	48
Dighton,	. 1,817	286	147	131	8	2.62	38
Easton,	. 3,668	557	306	251	-	2.53	40
Fairhaven, .	. 2,626	240	128	112	-	1.52	66
Fall River.	. 26,766	3,778	1,929	1,829	15	2.35	43
Freetown,	. 1,372	116	58	55	8	1.41	71
Mansfield,	. 2,432	302	144	158	-	2.07	48
New Bedford, .	.   21,320	2,655	1,341	1,313	1	2.08	48
Norton	. 1,821	184	108	75	1	1.68	59
Raynham,	. 1,713	251	121	130	_	2.44	41
Rehoboth,	. 1,895	191	111	80	_	1.68	60
Seekonk,	. 1,021	81	52	28	1	1.82	76
Somerset,	. 1,776	305	160	145	_	2.87	35
Swanzey,	. 1,294	189	106	83	_	2.43	41
Taunton	. 18,629	2,629	1,412	1.216	1	2.36	49
Westport,	. 2,724	837	189	144	4	2.06	48
Dukes County,	. 3,787	382	187	192	3	1.68	60
(II )	1 450					0.50	
Chilmark,	. 476	74	35	36	8	2.59	39
Edgartown,	1,516	165	78	87	-	1.81	55
Gay Head,*	160	7	4	3	-	4.20	24
Gosnold,	. 99	100	2	6	-	1.34	74
Tisbury,	. 1,536	128	68	60	-	1.98	1 "2
Essex County,	. 200,843	27,149	14,161	12,937	51	2.25	44
Amesbury,	. 5,581	855	452	396	7	2.55	89
Andover,	. 4,873	737	392	345	_	2.52	40
Beverly,	6,507	856	452	404	-	2.19	40
Boxford,	. 847	75	35	40	-	1.47	68
Bradford,	. 2,014	193	99	98	1	1.60	6:

<sup>\*</sup> One year only. Incorporated 1870.

for Six Years-Continued.

;	MARRIAGE	:s.			DEAT	н8.		
	Ra	TIO.			SEX.		RA	710.
Couples.	Marriages to 100 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
17	-40	247	85	22	13	_	-83	120
58	•50	199	183	96	87	_	1.59	63
127	-60	168	264	135	119	10	1.23	81
54	1.32	76	41	28	13	-	1.00	100
5,703	•93	108	10,539	5,238	5,286	15	1.71	59
62	·91	110	112	60	52	-	1.65	61
867	.90	111	758	365	393	-	1.87	54
· 172	1.01 -85	99	67 858	39 188	27 170	1	1·50 1·77	67 56
114	1.04	96	157	60	94	8	1.44	69
77	•84	290	837	171	166		1.58	65
116	·73	186	277	135	139	3	1.76	57
1.483	1.15	87	2.918	1.442	1.476	_	1.82	55
67	-81	123	128	65	56	2	1.49	67
100	-68	146	253	110	143	_	1.73	58
1,547	1.20	83	2,283	1,124	1,157	2	1.78	56
66	-60	165	154	69	85	-	1.41	71
81	.78	128	154	75	79	-	1.50	67
89	•78	128	166	85	81	-	1.46	68
38	-62	161	79	45	34	-	1.29	77
77 59	·72 ·76	139 132	198 144	102 76	96	_	1.86 1.86	54 54
1,030	-98	109	1,790	915	871	4	1.60	62
113	-69	145	211	112	99	-	1.29	77
201	•88	113	878	199	174	_	1.64	61
84	1.19	84	38	26	12	_	1.33	75
95	1.04	96	154	72	82	-	1.69	59
1	62	160	2	-	2	-	1.23	80,
8	·51	198	8	4	4	-	1.35	74
<b>6</b> 8	·73	136	171	97	74	-	1.85	54
11,962	-99	101	19,880	9,742	10,100	<b>38</b> -	1.65	61
264	•79	127	578	290	286	2	1.78	58
251	•85	117	557	267	289	1	1.91	52
342	·88	114	570	269	801	-	1.46	68
85 70	-69 -58	145 171	67 159	30 74	37 85	_	1·82 1·31	76 76
40	-00	*'*	108	(*	00	-	1.91	''

### TABLE XII.—General Abstract

				BIRTHS	3.		
Counties and Towns.	Population. U. S. Census			SEX.		RA	rio.
Countries and Towns.	1870.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
Essex—Con.							
Danvers,	5,600	890	471	418	6	2.64	38
Essex,	1,614	206	107	95	4	2.13	47
Georgetown,	2,088	191	95	96	-	1.53	66
Gloucester,	15,389	2,651	1,894	1,251	6	2.87	35
Groveland,	1,776	272	135	137	-	2.55	89
Hamilton,	790	78	37	41	-	1.64	61
Haverhill,	13,092	1,704	908	793	3	2.17	46-
Ipswich,	3,720	381	192	188	1	1.70	59
Lawrence,	28,921	4,485	2,293	2,189	8	2.58	89
Lynn,	28,233	3,961	2,016	1,936	9	2.34	43
Lynnfield,	818	94	49	45	-	1.92	52
Manchester,	1,665	248	184	114	-	2·48 2·82	40 86
Marblehead,	7,703	1,300	690	610	-		48
Methuen,	2,959	367	178 58	189	-	2·08 1·78	56
Middleton,	1,010 475	108 79	43	50 36	-	2.77	36
Nahant,	1,430	178	95	83	_	2.07	48
Newbury, Newburyport,	12,595	1,803	1,080	769	4	2.38	42
M	2,549	345	1,080	170	i	2.25	44
Peabody,	7,343	1,159	610	549	-	2.63	38
Darley and	3,904	640	320	319	1	2.73	37
Da-1	1,157	133	59	73	i	1.92	52
Salem,	24,117	1,605	851	754		1.11	90
Salisbury,	3,776	551	265	285	1	2.43	41
Saugus,	2,247	235	104	128	3	1.75	57
Swampscott,	1,846	279	153	126	_	2.52	40
Topsfield,	1,213	129	77	52	_	1.77	56
Wenham,	985	122	60	62	_	2.06	48
West Newbury,	2,006	239	133	106	-	1.99	50
FRANKLIN COUNTY,.	32,635	8,697	1,897	1,794	6	1.89	53
•	,	-,,,,,,	_,,,,,,	,			
Ashfield,	1,180	124	63	60	1	1.78	57
Bernardston,	961	118	58	60	_	2.05	49
Buckland,	1,946	316	165	150	1	2.71	37
Charlemont,	1,005	75	41	34	-	1.24	80
Coleraine,	1,742	167	88	79	-	1.60	63
Conway,	1,460	186	103	83	-	2.12	47
Deerfield,	3,632	571	299	272	-	2.62	38
Erving,	579	54	23	81	-	1.56	64
Gill,	653	48	27	21	-	1.22	82
Greenfield,	3,589	521	267	254	-	2.42	41
Hawley,	672	107	57	50	-	2.66	38
	613	58	28	80		1.58	63
Heath,	877	72	40	82	_	1.37	73

for Six Years-Continued.

	MARRIAGE	<b>.</b> 8.			DEAT	нз.		
	RA	тю.			SEX.		RA	TIO.
Couples.	Marriages to 100 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 190 Persons living.	Persons living to one Death.
804	-91	111	490	224	262·	4	1.46	69
66	-68	147	160	91	<b>6</b> 8	1	1-65	61
81	-65	155	184	74	60	· <b>-</b>	1-07	98
1,075	1.16	86	1,728	966	762	_	1.87	53
88	-83	121	174	81	91	2	1.63	61
84	.72	139	69	35	88	1	1.46	69
882	1.12	89	978	453	514	6	1.24	81
191	∙85	117	382	178	204	-	1.71	58
2,285	1.30	76	2,759	1,810	1,448	1	1-59	68
1,690	1.00	100	2,641	1,272	1,363	8	1.56	64
40	-82	128	81	44	37	_	1.65	61
83	-83	120	165	83	82	_	1.65	61
456	-99	101	1,050	535	515	_	2.27	44
153	•86	116	292	143	148	1	1.64	61
52	∙85	117	75	36	39	_	1.24	81
13	•46	219	84	21	13	_	1.19	84
56	.65	153	138	68	70	-	1.61	62
859	1.14	88	1,326	625	699	2	1.67	57
125	-82	122	238	121	117	_	1.56	64
255	-58	178	648	311	337	_	1.47	68
277	1.19	85	427	224	203	_	1.82	55
52	·75	184	129	64	65	_	1.86	54
1,843	.93	108	2,695	1,307	1,378	10	1.86	54
289	105	95	422	188	234	10	1.86	54
80	-60	169	196	107	88	1	1.45	69
56	·51	198	145	69	76	_	1.81	76
44	·61	165	98	48	45	_	1.28	78
57	-96	104	84	37	47	_	1.42	70
64	.53	188	201	97	104	-	1.67	60
02	-505	100	201		104	-	101	00
1,721	-88	114	3,102	1,446	1,647	9	1-58	68
52	74	136	90	88	52	-	1.27	79
73	1.26	79	81	46	85	-	1.41	71
105	•90	111	203	106	97	-	1.74	58
42	•70	144	75	86	89	-	1.24	80
100	-96	105	138	64	74	-	1.32	76
75	·85	117	165	72	98	-	1.88	53
109	∙50	200	288	119	169	-	1.82	76
36	1.03	97	55	82	23	-	1.58	63
. 26	-66	151	57	31	25	1	1.46	69
278	1.30	77	898	197	201	-	1.85	54
20	· <b>5</b> 0	202	65	27	88	-	1.61	62
87	1.01	99	38	17	20	1	1.06	94
82	-61	164	78	37	41	l	1.48	67

TABLE XII.—General Abstract

		1			BIRTH	8.		
Counties and T	'owne	Population. U. S. Census			SEX.		BA	TIO.
Country and 1	OWIE.	1870.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Person living to on Birth
Franklin—	Con.	1						
Leyden, .		518	67	35	32	-	2.16	46
Monroe, .		201	17	11	6	-	1.41	71
Montague, .		2,224	175	78	96	1	1.42	7
New Salem,		987	91	50	40	1	1.54	6
Northfield,		1,720	168	83	84	1	1.63	6:
Orange, .		2,091	127	63	64	-	1.01	9:
Rowe, .		581	48	23	20	<b> </b>	1.23	8:
Shelburne,		1,582	167	86	81	-	1.76	5
Shutesbury,		614	68	32	86	-	1.85	5
Sunderland,		832	103	46	57	-	2.06	41
Warwick, .		769	86	. 48	88	_	1.86	54
Wendell, .		589	86	16	20	_	1.11	8
Whately, .		1,068	132	67	64	1	2.06	4
Hampden Cou	INTY, .	78,409	11,158	5,706	5,483	19	2.87	4
Acarrom		2,001	255	126	128	1	2·18	4
Agawam, . Blandford, .		1,026	120	50	70		1.95	5
			159	77	80	2	2.10	4
Brimfield, .	• •	1,288				2	1.70	5
Chester, .	• •	1,253	128	67	61	ī	2.28	4
Chicopee, .		9,607	1,818	658	654			-
Granville, .	• •	1,293	134	63	70	1	1.72	5
Holland, .	• •	344	52	29	_22	1	2.72	8
Holyoke,		10,733	1,580	829	751	-	2.45	4
Longmeadow,		1,342	186	98	88	-	2.81	4
Ludlow, .		1,186	154	80	73	1	2.26	4
Monson, .		8,204	881	180	150	1	1.72	5
(State <b>Almsho</b> u	ıse,) .	-	145	74	71	-	-	
Montgomery,	• •	318	45	24	21	-	2.35	4:
Palmer, .		8,631	584	276	808	_	2.68	8
Russell, .		635	88	42	45	1	2.81	4
Southwick,		1,100	128	63	€5	-	1.94	5
Springfield,		26,708	4,038	2,060	1,977	1	2.52	40
Tolland, .		509	68	· 42	21	l –	2.07	4
Wales, .		831	92	56	36	l –	1.85	5
Westfield, .		6,519	905	469	427	8	2.31	4:
West Springfie	ld, .	2,606	377	182	195	-	2.40	4
Wilbraham,	•	2,880	281	161	120	-	2.01	5
Hampshire C	OUNTY,	44,388	5,808	3,028	2,772	8	2.18	4
Amherst, .		4,035	527	289	238	_	2.18	4
Belchertown,		2,428	251	130	121	-	1.72	5
Chesterfield.		811	98	47	46	-	1.92	5
	•		1			l		

for Six Years-Continued.

:	MARRIAGE	.s.			DEAT	Н8.		
	Ra	TIO.		İ	SEX.		RA	Ť10.
Couples.	Marriages to 100 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
81	1.00	100	48	26	22	_	1.55	65
21	1.75	58	10	3	7	-	∙88	121
89	.72	139	189	98	91	-	1.53	65
60	1.01	99	101	45	56		1.71	59
65	-63	159	158	60	92	1	1.48	67
142	1.14	88	231	105	124	2	1.84	54
21	-60	166	51	17	34	-	1.46	68
89	-93	107	159	72	84	8	1.68	60
35	-95	105	71	88	88	-	1.98	52
36	.72	139	99	88	61	-	1.98	50
51	1.11	91	95	44	50	1	2.06	49
47	1.45	69	60	88	27	-	1.86	54
49	∙76	181	104	50	54	-	1.62	62
4,811	1.02	98	7,959	4,002	8,943	14	1-69	59
<b>6</b> 8	-57	177	188	69	63	1	1.11	90
52	∙85	118	114	55	59	-	1.80	54
57	•75	134	117	61	56	-	1.53	65
57	.76	132	72	87	85	-	.96	104
668	1.16	86	1,081	546	585	-	1.88	58 78
52	-67	149	100	86	64	-	1.29 1.99	50
14	-68	147	41	17	24	-	1.80	56
825	1.28	78	1,158	587	570 74	1	1.82	55
67	·83	120	147 97	73 48	46	8	1.42	70
62	•91	110	247	134	118	-	1.28	78
127	-66	151	366	219	147		120	•-
18	-94	106	48	26	22	-	2.52	40
326	1.50	67	<b>34</b> 8	171	176	1	1.60	68
35	-92	109	58	30	27	lî	1.52	66
48	.75	183	100	53	45	2	1.52	66
1,719	1.07	93	2,551	1,255	1,296	-	1.59	63
21	-69	145	38	20	11	2	1.08	98
49	-98	102	65	33	82	_	1.80	77
361	-93	108	658	812	848	8	1.68	59
84	54	186	246	122	124	_	1.57	64
101	•72	188	179	98	81	-	1.28	78
2,576	-97	108	4,108	1,979	2,008	16	1.54	65
182	·75	183	355	170	185	_	1.47	68
135	-92	108	186	89	93	4	1.28	78
45	-92	108	80	45	35	-	1.64	61

TABLE XII.—General Abstract

						BIRTH	8.		
Countles and T	'owne		Population. U. S. Census			SEX.		RA	<b>T</b> 10.
	. V W 114.		1670.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
Hampshire-	-Con	•							
Cummington,	•		1,037	116	57	59	-	1.86	54
Easthampton,	•	•	8,620	486	266	219	1	2.24	45
Enfield, .	•	•	1,023	134	66	68	ī	2.18	46
Goshen, .	•	•	368     863	43 99	24 58	18 46	1	1.95 1.91	51 52
Granby, .	•	•	665	49	26	28	_	1.23	81
Green wich, Hadley, .	•	•	2.801	348	177	171	_	2.52	40
Hatfield, .	•	:	1,594	335	165	170		3 50	29
Huntington,	:		1,156	106	52	54	_	1.53	65
Middlefield,	•	•	728	103	51	52	_	2.36	42
Northampton,			10,160	1,482	802	675	5	2.43	41
Pelham, .			673	42	21	21	-	1.04	96
Plainfield, .			521	62	31	30	1	1.98	50
Prescott, .			541	47	26	21	-	1.45	69
South Hadley,			2,840	363	201	162	-	2.13	47
Southampton,			1,159	135	, 00	67	-	1.94	52
Ware, .			4,259	496	245	251	-	1.94	52
Westhampton,	•	•	587	94	40	54	-	2.67	38
Williamsburg,	•	•	2,159	294	135	159	-	2.27	44
Worthington,	•	•	860	103	56	47	-	2.00	50
MIDDLESEX C	OUNT	TY,	274,353	38,426	19,658	18,713	5 <b>5</b>	2.33	43
Acton, .			1,593	190	90	100	_	2.00	50
Arlington, .			8,261	483	247	286	-	2.47	41
Ashby, .	•		994	95	47	48	-	1.59	63
Ashland, .	•	•	2,186	295	159	133	3	2.25	45
Bedford,	•	•	849	109	76	83	-	2.14	47
Belmont, .	•	• 1	1,513	214	97	117	-	2.36	42
Billerica, .	•	•	1,833	201	92	109 18	-	1·83 1·53	55 65
Boxborough, Brighton, .	•	•	338   4,967	844	13 449	395	_	2 83	35
Burlington,	•	•	626	61	36	25	_	1.62	62
Cambridge,	•	•	39,634	6,554	3,317	3,280	7	2.75	36
Carlisle, .	•		569	57	31	26	<u> </u>	1.67	60
Charlestown,	•		28,323	3,900	1,983	1,911	6	2.29	44
Chelmsford,	•		2,374	328	175	153	_	2.30	43
Concord, .			2,412	282	153	129	_	1.95	51
Dracut, .	•		2,078	270	129	141	_	2.16	46
Dunstable,			471	42	19	23	-	1.49	67
Everett,* .			2,220	25	12	13	-	1.12	89
Framingham,			4,968	546	280	266	-	1.83	55
Groton, .	•		3,584	506	245	260	1	2.35	43
Holliston,	•		3,073	457	235	221	1	2.48	40
Hopkinton,	•	- 1	4,419	732	366	365	1	2.76	36
Hudson,† .	•		3,389	383	194	188	1	2.29	44

<sup>\*</sup> One year only. Incorporated 1870.

for Six Years-Continued.

	MARRIAGE	18.			DEAT	HS.		
	RA	TIO.		1	SEX.		RA	TIO.
Couples.	Marriages to 100 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
54	-87	115	97	45	52	_	1.56	64
153	.70	142	884	148	182	4	1.54	65
74	1.20	83	112	49	63	_	1.82	55
21	-91	110	48	23	20	-	1.95	51
<b>3</b> 0	•58	172	74	86	38	_	1.43	70
25	-62	160	78	42	81	_	1.83	55
93	ļ <b>∙68</b>	148	285	107	128	_	1.70	59
44	· <b>4</b> 6	217	177	86	91	-	1.85	54
72	1.04	96	120	58	61	1	1.73	58
23	•58	190	63	33	29	1	1.44	69
855	1.41	71	982	497	484	1	1.61	62
49	1.22	82	44	23	21	-	1.09	92
32	1.02	98	52	22	80	-	1.66	60
29	.89	112	40	18	22	-	1.23	81
147	-86	116	219	111	104	4	1.29	78
. 53	.76	131	117	49	68	-	1.68	59
292	1.15	88	880	180	199	1	1.49	67
18	-51	196	54	24	80	-	1.53	65
96	.74	185	178	85	88	-	1.34	75
54	1.05	96	98	39	54	-	1.81	55
14,526	-88	113	27,671	13,510	14,138	23	1.68	60
76	.79	126	155	70	85	-	1.62	62
103	•58	190	844	175	169	-	1.76	57
41	.69	145	125	57	67	1	2.09	48
106	·81	124	200	102	97	1	1.52	66
38	.75	134	89	45	44	-	1.75	57
43	•47	211	114	43	71	-	1.25	80
71	-65	155	203	109	94	-	1.84	54
13	-64	156	30	13	17	-	1.48	68
167	•56	178	491	260	231	-	1.65	61
21 2.169	-56	179	57	26	31	=	1.52	66
31	.91	110	3,767	1,853	1,908	6	1.58	68 .
	·91 1·12	110	53	21	32	-	1.55	64
1,903 105	•74	89 186	3,577 211	1,816	1,758	8	2.11	48
120	-83	121	226	92 116	119	-	1.48	68
58	43	285	196	77	110	;	1.56	64
16	•56	177	54	20	118 84	1	1.57	64
7	32	817	29	12	16	1	1.91 1.81	52
241	81	124	426	206	220	-	1.43	77 70
213	-99	101	825	153	172	-	1.43	66
190	1.03	97	254	124	180	-	1.37	78
185	-70	143	348	168	179	1	1.32	78
137	-81	124	219	109	110		1.31	77
201	1	1		1 100	1 110	ı –	1 01	, ,,

TABLE XII.—General Abstract

				BIRTH	3.		
Counties and Towns.	Population. U.S. Census			SEX.		RA	TIO.
	1870.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
Middlesex—Con.							
Lexington,	2,277	259	129	180	-	1.89	53
Lincoln,	791	88	44	44	-	1.86	54
Littleton,	983	102	57	44	1	1.73	58
Lowell,	40,928	4,937	2,561	2,874	2	2.01	50
Malden,	7,367	1,215	615 989	600 917	-	2·75 3·65	36 27
Marlborough,	8,474 5,717	1,856 587	802	280	5	1.71	58
Medford,	8,414	896	199	196	1	1.93	52
Meirose,	6,404	1,208	611	588	9	8.14	32
Newton	12,825	1,498	746	752	_	1.95	51
North Reading,	942	113	58	55	_	2.00	50
Pepperell,	1,842	225	126	99	_	2.04	49
Reading,	2,664	241	121	120	_	1.51	66
Sherborn,	1,062	89	48	46	-	1.40	72
Shirley,	1,451	186	73	63	-	1.56	64
Somerville,	14,685	2,217	1,126	1,090	1	2.52	40
Stoneham,	4,518	529	280	249	-	1.95	51
Stow,	1,813	245	138	107	-	2.27	44
Sudbury,	2,091	246	123	128	-	1.96	51
Tewksbury,	1,944	132	68	64	-	1.14	88
(State Almshouse), .		848	171	172	-		l .=
Townsend,	1,962	259	187	122	-	2.20	46
Tyngsborough,	629	41	22	19	-	1.09	92
Wakefield,	4,135	538	281	255	2	2.17	46
Waltham,	9,065	1,835 616	718 304	619	3	2·46 2·38	41 42
Watertown,	1,240	151	77	808 74	*	2.04	49
Wayland,	1,808	227	103	118	6	2.08	48
VII 4	1,261	102	49	53	_	1.85	74
Wilmington,	866	94	46	48	_	1.82	55
Winchester,	2.645	398	213	180	_	2.50	40
Woburn,	8,560	1,403	738	664	1	2.70	37
	5,555		,,,,		1		••
NANTUCKET COUNTY	4,123	318	178	139	1	1.28	78
Norfolk County, .	89,443	16,224	8,214	7,976	34	3-02	38
Bellingham,	1,282	142	73	68	1	1.78	56
Braintree,	8,948	483	243	239	1	2.04	49
Brookline,	6,650	1,051	553	491	7	2.63	38
Canton,	8,879	512	261	249	2	2.22	45
Cohasset,	2,130	287	159	128	-	2.22	45
Dedham,	7,342	1,118	579	538	1	2.54	89
Dorchester,*		1,458	720	785	8	2.72	37
Dover,	645	53	80	23	-	1.37	78
	<u> </u>	<u> </u>		<u> </u>	<u> </u>	l	

<sup>•</sup> Five years only. Annexed 1870,

for Six Years-Continued.

	MARRIAGI	28.	DEATHS.					
	R	ATIO.			BEX.		, RA	T10.
Couples.	Marriages to 100 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
111	-81	128	282	108	124	_	1.70	59
22	•46	216	59	80	29	_	1.25	80
44	•75	134	114	52	62	_	1.98	52
8,218	1.31	76	4,532	2,103	2,428	1	1.85	54
857	·81	124	660	820	338	2	1.49	67
462	·91	110	748	865	888	=	1.47	68
259	·76	132	468	208	265	_	1.37	73
158	77	130	281	124	156	1	1.87	73
837	-88	114	573	296	277	_	1.49	67
509	·66	151	767	346	421	_	1.00	100
47	·8 <b>3</b>	120	96	48	48	_	1.70	59
103	.69	107	193	90	103		1.75	57
	·61	165	266	125	141	-	1.66	60
97	·83	120	87	87	50	_	1.37	
53	·77	120		61	80	-	1.62	73
67			141			_		62
301	•84	293	1,429	788	691	_	1.62	62
178	·64	157	869	187	182	-	1.87	73
78	.72	139	141	74	66	1	1.28	77
63	2.01	199	157	71	86	-	1.25	80
51	•44	229	97	42	55		·83	120
	-	- <u>-</u> 0	1,415	788	627	_		
116	-98	102	214	105	109	-	1.82	55
29	•77	180	79	86	48	-	2.08	48
286	•95	105	885	186	199	-	1.56	64
609	1.12	89	888	485	451	2	1.64	<b>61</b>
288	1.11	90	858	166	191	1	1.38	78
42	∙56	177	106	62	44	-	1.42	70
88	•77	180	190	92	97	1	1.76	57
42	·55	180	100	48	52	-	1.32	76
37	•71	140	96	50	46	-	1.85	54
120	∙76	132	186	90	96		1.18	85
<b>3</b> 70	•72	139	751	365	386	-	1.47	68
255	1.08	97	580	276	804	-	2.34	43
4,974	-93	108	10,359	5,047	5,294	18	1.93	52
36	45	221	91	50	89	2	1.14	88
152	•64	156	877	183	194	-	1.59	63
824	·81	123	546	272	274	-	1.87	78
178	.74	185	825	147	177	1	1.40	72
108	·81	124	198	100	98	-	1.55	65
839	.77	130	706	861	844	1	1.60	62
489	·91	110	893	416	474	8	1.66	60
26	-67	149	50	18	82	-	1.80	7 <b>7</b>

## TABLE XII.—General Abstract

•				BIRTH	3.		
Counties and Towns.	Population. U. S. Census			SEX.		RA	710.
Countries and 10 mass	1870.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
Norfolk-Con.	9.057	296	138	155		1.01	62
Foxborough,	8,057			155	3	1.61	
Franklin,	2,512	243	114	129	-	1.61	62
Hyde Park,*	4,136	367	177	190	-	2.96	34
Medfield,	1,142	109	54	55	-	1.59	63
Medway,	3,721	478	139	238	1	2.14	47
Milton,	2,683	384	203	181	-	2 39	42
Needham,	8,607	523	240	282	1	2.41	41
Norfolk,†	.   1,081	31	10	21	=	2.86	35
Quincy,	. 7,442	1,057	550	504	3	3.45	29
Randolph,	.   5,642	934	480	453	1	2.78	36
Roxbury,‡	•	2,634	1,351	1,283	-	3.09	32
Sharon, .	. 1,508	164	84	78	2	1.82	55
Stoughton, .	4,914	752	873	379	-	2.39	42
Walpole,	. 2,137	230	125	103	2	1.79	56
West Roxbury, .	.   8,683	1,148	568	575	-	2.19	46
Weymouth,	. 9,010	1,497	764	729	4	2.78	86
Wrentham, .	. 2,292	278	126	150	2	2.02	50
PLYMOUTH COUNTY	r, 65,365	8,897	4,606	4,276	15	2.27	44
Abington,	. 9.308	1,456	753	703	_	2.63	38
Bridgewater, .	3,660	487	268	219	_	2.22	45
(State Almshouse),		233	120	113	-		_
Carver,	. 1.092	131	74	57	-	2.00	50
Duxbury,	2,341	253	141	110	2	1.78	56
East Bridgewater,	. 3.017	335	161	174	_	1.85	54
Halifax,	. 619	70	30	40	l _	1.89	53
Hanover,	. 1.628	219	105	114	_	2.22	45
Hanson,	1,219	152	82	70	_	2.08	48
Hingham,	4,422	522	292	228	2	1.96	51
Hull,	261	29	16	13	_	1.85	54
Kingston,	1.604	179	86	92	1	1.85	54
Lakeville,	. 1,159	158	71	87	1	2.27	44
Marion,	l 'ene l	108	43	60		1.92	52
Marshfield.	1,659	186	98	86	2	1.85	54
Mattapoisett, .	1,361	139	66	72	lī	1.92	52
Middleborough, .	4,687	482	247	235	-	1.70	58
North Bridgewater,	8,007	1,221	613	604	4	2.33	43
Pembroke	1,447	181	98	88	4	2.08	48 48
Plymouth,	6,238	927	478	446	3	2 50	40
Distriction	804	86	47	89	1 -		
Plympton,				1	-	1.78	56
Rochester,	1,024	115	60	55	-	1.89	53
Scituate,	2,350	308	171	137	-	2.17	46
South Scituate, .	. 1,661	183	102	81	-	1.85	54
Wareham,	.   3,098	517	268	249	-	2.78	36
West Bridgewater,	.   1,803	225	121	104	-	2.08	48

<sup>\*</sup> Three years only. Incorporated 1868. † One year only. Incorporated 1870. ‡ Three years only. Annexed 1867.

for Six Years-Continued.

	MARRIAGE	28.			DEAT	H8.		
	RA	T10.			SEX.		RA	T10.
Couples.	Marriages to 100 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
136	.74	135	240	105	135	_	1.32	76
111	.74	136	229	98	129	2	1.52	66
94	-76	132	158	76	82	1 -	1.28	78
56	-82	122	94	42	52	-	1.37	78
169	.76	132	311	147	164	-	1.39	72
141	-88	114	247	118	129	-	1.54	65
133	-61	163	317	162	155	-	1 47	68
11	1.02	98	8	7	1	-	.74	135
336	1.10	91	730	386	344	-	2-38	42
262	.78	129	580	293	283	4	1.71	58
736	-86	116	1,746	818	925	3	2.05	49
63	∙69	144	146	77	69	-	1.61	62
227	.72	139	443	225	217	1	1.41	71
87	-68	147	218	111	102	-	1.67	60
219	•42	238	641	317	323	1	1.23	81
421	·78	128	812	403	409	-	1.50	67
130	•94	106	258	115	143	-	1.88	53
8,434	<b>•88</b>	114	6,664	8,350	8,295	19	1.70	59
<b>4</b> 51	-81	124	737	871	363	3	1.32	76
.176	. ∙80	125	273	146	127	-	1.25	80
_	-	-	561	307	254	-	_	-
63	-96	104	112	63	49	-	1 69	59
112	-80	125	216	111	105	-	1.54	65
171	∙94	106	286	149	137	-	1.58	68
85	∙94	106	65	29	85	1	1.75	57
93	∙95	105	164	92	72	-	1.67	60
70	-96	104	115	63	52	-	1.56	64
191	.72	139	450	206	243	1	1.69	59
10	·64	157	28	18	10	-	1.47	68
83	•86 •	116	168	73	95	-	1.75	57
61	•88	114	109	54	55	-	1.56	64
51	•95	105	102	54	48	-	1.92	52
72	.72	138	153	73	79	1	1.54	65
86	1.19	84	177	89	87	1	2.44	41
239	·85	118	428	201	222	-	1.52	66
446	-84	119	697	356	331	9	1.32	76
87	1.00	100	154	75	78	1	1.79	56
390	1.04	96	700	333	367	-	1.89	58
50	1.04	96	88	37	45	1	1.72	58
60	∙98	102	94	54	40	-	1.54	65
118	·8 <del>1</del>	119	203	116	87	-	1.45	69
85	·85	117	160	65	95	-	1.61	62
173	-93	107	802	150	152	-	1.61	62
66	·61	164	137	70	67	-	1.26	79

## TABLE XII.—General Abstract

•					BIRTHS.								
Countles	an/	Towns		Population. U. S. Census			Sex.		RA	710.			
Countries	- LIIU	TOWER.		1870.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Person Hving to one Birth			
Suppole	Cot	JNTY,	•	270,802	42,151	21,456	20,689	6	2.60	31			
Boston,				250,526	89,268	20,003	19,259	1	2.61	8			
Chelsea.				18,547	2,672	1,340	1,328	4	2.40	4			
Revere.				1,197	117	65	51	1	1.64	6			
Winthrop,	•	•	•	532	99	48	51	-	3.12	3:			
Worcest	er (	Count	ſ¥,	192,716	27,802	14,212	18,547	43	2.40	4			
<b>Ash</b> burnha	ım.			2,172	296	162	133	1	2.27	4			
Athol,		•		8,517	288	148	140	_	1.37	7			
Auburn,			·	1,178	117	58	59	_	1.87	6			
Barre,				2,572	271	136	135	_	1.75	5			
Berlin,		•		1,016	142	66	76	_	2.32	4			
Blackstone				5,421	896	454	489	3	4.00	2			
Bolton,	•			1,014	163	72	91	_	2.70	3			
Boylston,				800	106	55	51	_	2.22	4			
Brookfield				2.527	349	167	182	_	2.82	4			
Charlton,	'.	•		1,878	144	86	58	_	1.28	7			
Clinton,				5,429	898	455	440	3	2.78	3			
Dana,				758	67	25	42	_	1.47	6			
Douglas,				2,182	447	226	221		3.45	2			
Dudley,				2,388	432	216	216	_	3.03	l s			
Fitchburg,				11,260	1,446	732	714	-	2.13	4			
Gardner,				8,333	419	220	199	-	2.08	4			
Grafton,				4.594	596	324	272	_	2.17	4			
Hardwick,				2,219	308	153	150	_	2.27	4			
Harvard,				1,341	118	51	67	_	1.35	7			
Holden,				2,062	216	110	106	_	1.75	5			
Hubbardst	on.			1,654	171	90	81	_	1.72	5			
Lancaster	•	•		1,845	130	71	59	_	1.18	8			
Leicester,				2,768	416	219	197		2.50	4			
Leominste				3,894	450	232	214	4	1.92	5			
Lunenbury	χ,			1,121	116	67	49	_	1.72	5			
Mendon,	•			1,175	181	90	91	_	2.57	3			
Milford,				9,890	1,935	991	944	-	3.38	3			
Millbury,				4,397	836	425	411	_	3.16	3			
New Brain	itre	э, .		640	51	22	26	3	1.33	1 7			
Northboro				1,504	195	88	107	_	2.17	4			
Northbrid				3,774	539	271	268	_	2.38	4			
North Bro		eld,		3,343	523	285	238	_	2.61	3			
Oakham,				860	66	38	28	_	1.28	7			
Oxford,				2,669	356	191	165	_	2.22	4			
Paxton,				646	46	21	25	_	1.19	8			
Petersham				1,335	123	62	61	l _	1.54	ĕ			
Phillipstor		•		693	76	40	35	1	1.83	5			

for Six Years—Continued.

:	MARRIAGE	<b>.8.</b>			DEAT	H8.		
	RA	TIO.			Sux.		RA	710.
Couples.	Marriages to 100 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
19,165	1.18	85	32,865	16,526	15,882	7	2.00	50
18.046	1.20	83	30,450	15,564	14,886	_	2.02	49
1,078	-97	103	1,819	928	890	6	-90	111
20	•28	859	64	28	36	_	-89	112
21	-64	157	32	ii	20	1	1.00	100
10,598	-92	109	19,102	9,569	9,498	35	1.65	61
147	1.12	89	241	132	109	-	1.85	54
206	-98	102	309	154	155	· _	1.47	68
41	• •58	172	64	31	83	· _	-91	110
142	.92	109	266	127	138	1	1.70	58
65	1.09	92	99	48	50	ī	1.64	61
346	1.54	65	520	256	262	2	2 32	48
55	-90	111	155	72	83	_	2 56	89
44	.92	109	100	51	49	_	2.08	48
137	-90	iii	203	92	111	-	1.33	75
91	-81	124	185	94	91	_	1.64	61
317	-97	103	492	241	249	2	1.52	66
50	1.10	91	69	36	33		1.52	66
127	-97	•103	255	128	127	· <b>-</b>	1.96	51
59	41	242	287	129	156	2	2.00	50
660	-98	102	1,055	549	506	_	1.56	64
142	. 71	141	243	123	120	_	1.22	82
232	-84	119	356	166	189	1	1.30	77
106	.79	126	114	51	63	_	∙85	117
42	.52	192	139	64	75	-	1.54	65
109	-88	113	191	92	99	_	1.54	65
86	∙87	115	136	60	74	2	1.37	73
. 91	-82	122	137	68	69	-	1.23	81
122	·73 ·	136	279	152	127	_	1.67	60
134	.57	174	409	197	212	-	1.75	57
52	•78	129	135	62	73	_	2.00	50
46	-65	153	103	47	56	-	1.46	68
586	1.02	98	1,167	606	561	-	2.04	49
245	.92	108	453	237	215	1	1.72	58
36	-93	107	55	27	27	1	1.43	70
69	.76	181	142	68	74	-	1.57	64
183	-81	124	255	117	138	-	1.13	89
148	·74	135	343	169	172	2	1.71	58
33	∙64	156	102	50	51	1	1.98	51
131	-82	122	265	124	140	1	1.66	60
23	-60	168	69	37	32	-	1.78	56
66	-83	121	135	66	69	-	1.69	59
46	1 11	90	74	81	43	l _	1.78	56

## TABLE XII .- General Abstract

		.			BIRTHS	3.		
Counties and Towns	_	Population. U. S. Census			SEX.	RATIO.		
		1870.	Persons.	Malos.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
Worcester—Con	•							
Princeton,	٠.	1,279	. 121	61	60	_	1.58	63
Royalston,		1,354	131	72	54	5	1.61	62
Rutland,		1,024	131	72	59	-	2.13	47
Shrewsbury,		1,610	231	130	101	_	2.39	42
Southborough,		2,185	291	153	138	-	2.27	44
Southbridge, .		5,208	747	361	386	-	2.39	42
Spencer,		3,952	797	890	405	2	<b>3</b> ·36	30
Sterling,		1,670	195	105	88	2	1.95	51
Sturbridge, .		2,101	183	95	88	_	1.45	69
Sutton,		2,699	353	186	167	_	2 18	46
Templeton, .		2,802	379	203	176	_	2 26	44
Upton,		1,989	279	133	146	_	2 34	43
Uxbridge,		8,058	416	209	205	2	2.27	44
Warren,		2,625	401	218	183	_	2.54	39
Webster,		4,763	708	362	346	_	2.47	40
Westborough, .		3,601	545	285	260		2.52	40
West Boylston, .		2,862	435	211	224	_	2.53	39
West Brookfield.	•	1,842	255	140	115	_	231	43
Westminster,	•	1,770	161	77	84	_	1.52	66
Winchendon, .	•	3,398	435	225	198	12	2.13	47
Worcester		41,105	6,684	3,405	3,274	5	2.71	<b>37</b>

for Six Years-Concluded.

	MARRIA	GES.			DEAT	H8.			
	R	ATIO.			SEX.		RATIO.		
Comples.	Marriages to .00 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to on Death.	
57	-74	135	129	64	65	•	1.68	59	
77	∙95	105	158	72	86	-	1.94	51	
51	-83	121	101	40	61	-	1.64	61	
79	-82	122	186	96	90	-	1.93	52	
95	-74	185	185 616	91 297	94 317	2	1·45 1·97	69 51	
339	1.09	92	356	186	167	8	1.50	67	
159   67	-67	149 150	173	82	91	0	1.78	1 58	
94	-67 -75	134	167	84	83		1.32	75	
121	·75	184	237	129	108		1.46	68	
156	.93	108	269	139	130	_	1.60	62	
99 .	.83	121	166	75	91	_	1.89	72	
	1.00	100	268	132	136	_	1.46	68	
145	-92	109	226	114	112	_	1.43	70	
	143	70	432	207	223	2	1.51	66	
164	76	132	349	196	153	-	1.61	62	
139	·81	123	235	116	119	-	1.37	78	
81	.74	136	184	96	86	2	1.67	60	
87	-82	122	183	89	94	-	1.72	58	
212	104	96	842	172	164	6	1.68	60	
2,567	1.04	96	4,538	2,338	2,197	8	1.84	54	

## TABLE XII.—General Abstract

		1. 1	BIRTHS.									
Counties and Towns	L	Population. U. S. Census			SEX.		RATIO.					
		1870.	Persons.	Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.				
Worcester-Con	١.						1					
Princeton,	٠.	1,279	. 121	61	60	_	1.58	63				
Royalston,		1,854	131	72	54	5	1.61	62				
Rutland.		1,024	131	72	59	_	2.13	47				
Shrewsbury, .		1,610	231	130	101	_	2.39	42				
Southborough, .		2,135	291	153	138	_	2.27	44				
Southbridge, .		5,208	747	361	386	_	2.39	42				
Spencer,		3,952	797	390	405	2	3.36	30				
Sterling,		1,670	195	105	88	2	1.95	51				
Sturbridge, .		2,101	183	95	88	_	1.45	69				
Sutton,		2,699	353	186	167	-	2.18	46				
Templeton, .		2,802	379	203	176	۱ –	2 26	44				
Upton,		1,989	279	133	146	_	2 34	43				
Uxbridge, .		3,058	416	209	205	2	2.27	44				
Warren,		2,625	401	218	183	_	2.54	39				
Webster.		4.763	708	362	346	_	2.47	40				
Westborough.	•	3,601	545	285	260	_	2.52	40				
West Boylston,		2,862	435	211	224	_	2.53	39				
West Brookfield.		1,842	255	140	115	_	2 31	43				
Westminster,	·	1,770	161	77	84	_	1.52	66				
Winchendon, .		3,398	485	225	198	12	2.13	47				
Worcester.		41,105	6,684	3,405	3,274	5	2.71	37				

for Six Years-Concluded.

	Marriage	.s.			DEAT	ня.		
	RA	TIO.			SEX.		RA	.TIO.
Couples.	Marriages to .00 Persons.	Persons living to one Marriage.	Persons.	Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
57 77	•74 •95	135 105	129 158	· 64	65 86	•	1.68 1.94	59 51
51	-83	121	101	40	61		1.64	61
79	-82	122	186	96	90	-	1.93	52
95	.74	185	185	91	94	_	1.45	69
339	1.09	92	616	297	317	2	1.97	51
159	-67	149	356	186	167	3	1.50	67
67	67	150	173	82	91	i –	1.73	58
94	.75	134	167	84	83	_	1.32	75
121	·75	134	237	129	108	-	1.46	68
156	. •93	108	269	139	130	-	1.60	62
99	•83	121	166	75	91	-	1.39	72
183	1.00	100	268	182	136	-	· 1·46	68
145	-92	109	226	114	112	-	1.43	70
411	1.43	70	432	207	223	2	1.51	66
16 <del>4</del>	<b>-7</b> 6	132	849	196	153	-	1.61	62
139	-81	123	235	116	119	-	1.37	73
81	•74	136	184	96	86	2	1.67	60
87	•82	122	183	89	94	-	1.72	58
212	1.04	96	342	172	164	6	1.68	60
2,567	1.04	96	4,538	2,338	2,197	8	1.84	54

TABLE XIII.—BIRTHS.—Six YEARS—1865-70.

Distinguishing by Counties, by Months, and by Sex, the registered Number of Children Born ALIVE during the Six Years, 1865-70; also, for the entire State, the Percentage of the Numbers in each Month (distinguishing Sex), to the Total Number.

I															I	
6 Years. Months.	8 E X.	Percentage.	Brath.	.eldatemaß	Serkshire.	Lotaha	Dukes and Rentucket.	Ecoex.	Pranklin.	Hampden.	oridequaH	Middlesex.	Morfolk.	Plymouth.	Suffolk.	.19189070 W
		_											•			
٠,	Totals,	100.00	209,989	4,413	9.226	14,338	200	27,149	3,697	11,158	5,808	38,426	16,224	8,897	42,151	27,802
18	Males,	51.38	107,856	2,267	4,841	7.445	365	14,161	1,897	5.706	8,028	19,658	8.214	<b>4</b> ,606	21,456	14,212
X	Females, .	48-48	101,805	2,119	4,866	6,852	881	12,987	1,794	5,483	2,772	18,718	7,976	4,276	20,689	13,547
ا و	Unknown, .	16	328	. 27	19	41	4		80	19	<b>∞</b>	55	84	12	9	48
_	Totals, .	7-41	15,570	305	628	1,102	22	1,948	248	833	418	2,793	1,147	862	8,310	2,126
·u	Males,	8.80	7,975	145	342	288	21	1,062	131	408	210	1,408	289	327	1,624	1,116
B€	Females, .	8.60	7,578	180	286	200	21	88	116	425	204	1,383	226	333	1,686	1,007
	Unknown,	•	22	1	•	20	67	01	_	87	_	61		<b>C</b> 1	1	ಣ
_	Totals,	96-9	14,616	254	642	1.071	45	1,825	211	724	381	2,664	1,120	636	3,132	1,911
·q	Males,	3.62	7.607	126	832	286	15	957	105	868	216	1,408	200	810	1,621	1,028
Fe	Females, .	8:33	6,981	127	807	202	53	864	108	855	163	1,251	222	826	1,511	88
	Unknown, .	ō	88	-	က	တ	-	4	1	_	67	20	က	1	1	ю
_	Totals,	8.09	16,993	288	745	1,151	88	2,165	301	912	470	8,141	1,316	733	3,552	2,186
ır.	Males,	4.20	8,816	142	888	612	23	1,147	180	461	82	1,583	985	886	1,867	1,146
W	Females, .	8.89	8,166	141	845	538	15	1,018	141	450	250	1,556	652	848	1,684	1,088
	Unknown, .	.00	#	•	_	-	1		ı	-	_	67	လ	1		<b>67</b>
_	Totals,	7.57	15,895	282	786	1,083	55	1,996	278	880	474	2,815	1,282	694	3,186	2,196
.70	Males,	3.89	8,187	150	879	222	88	1,038	152	428	252	1,439	628	352	1,649	1,141
Ϊγ	Females, .	. 8.67	7,698	142	358	220	88	958	128	481	222	1,374	200	<b>%</b>	1,586	1,051
	Unknown, .	10-	15	1	-	67	ı	67	-	-	1	67	1	-	-	4
	Totals,	7.84	16,478	272	414	1,105	28	2,038	820	842	475	2,963	1,215	686	8,884	2,836
٠.٧	Males,	9.4	8,410	189	894	591	8	1,085	162	414	246	1,510	618	868	1,697	1,162
·Na	Females, .	89.83	8,063	181	884	514	28	921	158	<b>42</b> 6	83	1,458	8	818	1,687	1,178
 T	Unknown,		2	~s	_	ī	ī	ο <b>ν</b>	ı	<b>~</b>	1	ī	_	ı	1	<b>-</b>

June	luly.	Aug.	adəg	#9O	Nov.	d. Dec.	Not sta
Totals, Males, Females, Unknown.	Totale, Males, Females.	Unknown, Totals, Males, Females,	Totals, Males, Females, Unknown,	Totals, Males, Females, Unknown,	Males, Females, Unknown, Totals.	Males, Females, Unknown, Totals,	Males, Females, Unknown,
• • • •	• • •					• • • •	• • •
7.87 4.04 28.82 1.05	8-73 4-48 4-24	9:17 4:66 4:50	6.8 4.57 10.	9-25 4-71 6-52 10-6	44 162 163 163 163 163 163 163 163 163 163 163	47.4 42.45 60.80	<u> </u>
16,519 8,480 8,020 19	18,338 9,405 8.903	30 19,264 9,790 9,456	18,718 9,592 9,096 25	19,431 9,397 9,506 28 18,703	9,683 8,987 19,286	9,950 9,276 00 188	288
815 165 149	481 282 198	473 253 217	258 258 388 388	2065 2064 2065 2065 2065	229 196 395	171 8 8	H40
769 411 356	887 487 898	836 428 407	853 453 899 1	843 447 495 1	855 2 2777	404 372 1	ကတဆ
1,098 591 504	1,239 635 597	1,271 662 607	1,286 638 647	1,322 680 640 2 2	625 625 4 1.310	685 619 6	210
4042	246	344	. 52 24 35 1	2 8 8 2	32 22 22 22 22 22 22 22 22 22 22 22 22 2	25.	1 1 1
2,063 1,048 1,012	2,358 1,196 1,153	2,659 1,395 1,264	2,524 1,276 1,244	2,608 1,327 1,272 4	1,346 1,153 10 2,450	1,158	ਾਹ ਸਹ 🛏
814 159 155	852 187 165	854 175 178	355 186 169	846 192 153 1	141	146 167 1	AH 1
810 446 363	991 474 516	1,094 556 536	998 509 481	1,044 555 488 1,016	491 1,008	456 456 1	16
450 234 216	512 263 249	511 255 255	1 528 254 273 1	245 285 259 1	235	218 218 -	ର ର୍ଚ୍ଚ ମ
			3,487 1,810 1,678				
1,294 646 647	1,861 699 658	1,425 745 680	1,451 735 714	1,510 758 754 3	768 775 20 1.800	812 112 8	400
			822 443 378				
8,851 1,677 1,674	3,606 1,888 1,768	8,789 1,862 1,876	3,502 1,797 1,794	8,778 1,985 1,837 1,837	1,945 1,791 - 8,878	1,948	H 60 I
2,278 1,177 1,098	2,518 1,301 1,217	2,561 1,247 1,311	2,363 1,209 1,150	2,535 1,258 1,258 1,275 2,380	1,192 1,167 1,2,899	1,233 1,161 5 33	e 51 8

# SUPPLEMENT TO TABLE XIII. PLURALITY BIRTHS.—SIX YEARS—1865-70.

[Included in Tables XII. and XIII.]

6 Years. Months.	SEX.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket	Essex.	Franklin.	Hampden.	Hampshire,	Middlesex.	Norfolk,	Plymouth.	Suffolk.	Worcester.
6 Years.	Totals, . Males, . Fem., . Unk., .	4,095 2,105 1,988 2	102 48 54	138	251 132 119	32 17 13 2	580 318 262	35	229 119 110	102 50 52	736 364 372	317 185 132	211 103 108	362	486 234 252
Jan.	Totals,. Males, . Fem., . Unk., .	300 147 151 2	12 4 8	15 9 6	12 5 7	2 - - 2	45 27 18	6 1 5	8 2 6 -	6 4 2 -	58 25 33 -	20 11 9 -	14 8 6 -	73 38 35 -	13
$\overset{\mathbf{Feb.}}{\rbrace}$	Totals,. Males, . Fem., .	260 129 131	4 - 4	14 6 8	18 9 9	4 1 8	28 14 14	2 - 2	18 11 7	4	48 21 27	24 14 10	10 5 5	46 20 26	24
Mar.	Totals, . Males, . Fem., .	268 135 133	2 1 1	14 10 4	8 3 5	1	32 16 16	5 5 -	16 7 9	8 4 4	58 30 28	30 16 14	12 4 8	44 19 25	20
Apr.	Totals,. Males, . Fem., .	348 178 170	4 2 2	28 16 12		6 4 2	38 28 10	8 3 5	12 6 6	8 · 3 5	60 28 32	38 22 16	18 10 8	68 32 36	20
May.	Totals, . Males, . Fem., .	335 179 156	8 4 4	18 7 11	27 14 13	-	43 18 25	6 3 3		12 4 8	65 36 29	14 7 7	20 16 4	50 28 22	52 29 23
June.	Totals,. Males, . Fem., .	376 - 192   184	8 3 5		38 20 18	4 1 3	51 26 25	8 6 2	12	4 3 1	50 27 23	40 26 14	18 7 11	67 33 34	42 17 25
July. {	Totals, . Males, . Fem., .	348 177 171	12 7 5	26 15 11	24 12 12	2 1 1	62 26 36	10 3 7	14 8 6	12 5 7	68 37 31	16 9 7	18 8 10	40 19 21	

SUPPLEMENT TO TABLE XIII.—Concluded.

Months.	SEX.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Saffolk.	Worcester.
Aug.	Totals,. Males, . Fem., .	887 200 187	10 8 2	84 18 16	12 6 6	4 1 8	64 30 84	10 5 5	22 15 7	10 6 4	62 35 27	20 15 5	12 8 9	80 40 40	
Sept.	Totals, . Males, . Fem., .	854 197 157	18 11 7	26 15 11	26 15 11	2	42 28 14	6 3 3	30 15 15	2	61 83 28	16 8 8	83 21 12	56 25 31	32 19 13
# { Obj.	Totals,. Males, . Fem., .	412 206 206	10 4 6	22 12 10	36 28 13	4 4 -	58 36 22	3 3 -	26 12 14	5	86 37 49	<b>8</b> 5 21 <b>14</b>	11	58 24 34	14
Nov.	Totals, . Males, . Fem., .	824 165 159	14 4 10	22 11 11	14 8 6	2 1 1	52 27 25	6 2 4	16 8 8	6 2 4	46 24 22	82 14 18	20 9 11	53 35 18	41 20 21
) Dec	Totals,. Males, . Fem., .	383 200 183	-	18 8 10	28 13 15		65 42 23	1	25 10 15	8	74 81 43	82 22 10	8 1 7	81 49 82	

TABLE XIV.—STILLBORN.—SIX YEARS—1865-70.

Distinguishing by Counties, by Months, and by Sex, the registered Number of Still-births during the Six Years, 1865-70.

6 Years. Months.	SEX.	STATE.	Barnstable.	Berkshire.	Bristol	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire,	Middlesex.	Norfolk.	Plymouth.	Suffolk	Worester.
6 Years.	Totals, . Males, . Fem., . Unk., .	6,075 8,328 2,329 418	98 46 31 21	35	391 217 133 41	16 8 5 8	693 356 271 66	47 23 20 4	144 77 51 16	62 29 30 3	870 485 817 68	404 193 158 58	61	2718 1563 1084 66	235 155
Jan.	Totals,. Males,. Fem.,. Unk.,.	470 270 170 30	6 4 1 1	1	33 18 10 5	8 1 2 -	60 38 22 5	1 1 1 1	9 8 5 1	-	66 38 23 5	26 13 8 5	11 5 5 1	225 183 86 6	30 21 8 1
Feb.	Totals,. Males,. Fem.,. Unk.,.	469 253 186 80	4 3 1 -	3 1 2 -	28 15 10 8	1 1 - -	51 28 28 28 5	3	10 4 2 4	4 2 2 -	64 43 20 1	44 20 16 8	13 3 9 1	214 116 93 5	30 19 8
Mar.	Totals, . Males, . Fem., . Unk., .	536 289 204 43	7 4 2 1	9 5 8 1	39 21 14 4	-	65 86 21 8	1 1 -	15 8 6 1	10 6 4 -	65 31 26 8	44 20 18 6	9 2 5 2	234 183 98 8	38 22 12 4
Apr.	Totals,. Males, . Fem., . Unk., .	494 278 189 27	4 2 2 -	2 2 - -	26 16 7 3	1 1 - -	61 32 28 6	6 1 5 -	5 3 2 -	5 8 2 -	87 51 28 8	29 16 9 4	8 4 2 2	224 127 94 3	36 20 15
May.	Totals,. Males, . Fem., . Unk., .	501 262 210 29	6 2 2 2	10 6 3 1	27 11 12 4	2 - 2 -	59 83 24 2	6 2 8 1	7 5 2 -	7 2 5	80 40 36 4	23 9 11 3	12 6 4 2	233 131 94 8	29 15 12 2
June.	Totals, . Males, . Fem., . Unk., .	515 282 193 40	7 2 3 2	4 1 8 -	28 16 8 4	3 - -	53 29 19 5	8 2 1 -	9 4 3 2	9 4 5	76 49 21 .6	46 24 20 2	10 4 5 1	223 126 90 7	18 15 11
July.	Totals,. Males, . Fem., . Unk., .	508 284 195 29	9 2 8 4	5 4 1 -	41 25 12 4	8 2 - 1	52 88 18 1	3 2 1 -	11 7 2 2	2 - 1 1	67 35 28 4	36 17 14 5	11 7 3 1	236 135 97 4	32 15 15

TABLE XIV.—Concluded.

Months.	SEX.	Втатв.	Barnstable.	Berkahire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden,	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Baffolk.	Wordester.
Aug.	Totals,. Males, . Fem., . Unk., .	510 277 199 34	8 4 4 -	6 3 2 1	26 16 7 3	- - -	64 27 33 4	2 - 2	12 7 4 1	5 3 2	62 35 20 7	31 14 12 5	15 5 5 5	248 143 94 6	86 20 14 2
Sept.	Totals,. Males, . Fem., . Unk., .	472 251 181 40	11 6 3 2	2 1 - 1	26 15 10 1	1	53 25 20 8	5 2 3 -	17 8 6 8	6 3 3	82 38 37 7	27 15 6 6	8 6 1 1	199 115 78 6	35 17 14 4
Oct.	Totals,. Males, . Fem., . Unk., .	481 268 171 42	12 5 4 3	8 3 2 3	36 20 13 3	- - -	51 32 14 5	4 - 3 1	10 5 4 1	6 3 2 1	58 30 15 8	29 16 7 6	12 5 6 1	225 180 88 7	35 19 13 3
Nov.	Totals,. Males,. Fem.,. Unk.,.	505 274 196 35	11 7 4 -	15 5 6 4	33 22 7 4	- - -	54 26 20 8	6 4 1 1	16 9 7 -	6 2 3 1	82 40 36 6	26 14 9 8	11 6 5	205 119 81 5	40 20 17 3
Dec.	Totals,. Males, . Fem., . Unk., .	602 335 231 36	13 5 2 6	6 3 1 2	46 21 22 8	2 - 1 1	68 25 34 9	8 6 1 1	28 14 8 1	2 1 1 -	85 55 27 8	40 15 20 5	13 7 6 -	252 155 96 1	44 28 12 4
Not sta'd.	Totals,. Males,. Fem.,. Unk.,.	12 5 4 3	-	1 - - 1	2 1 1 -		2 2 -	1 1 1		-	1 - 1	3 - 8 -	1 1 -	1 1	1 1

TABLE XV.-MARRIAGES.-SIX YEARS-1865-70.

Distinguishing by Counties, and by Months, the Number of Marriages registered during the Six Years, 1865–70.

SIX TEARS. MONTHS.	A B 8.		. Втати.	.eldatarra&	Berkshire.	Bristol	Dukes & Nan- tucket.	Essex.	Frankilo.	Hampden.	Hampehire.	Middlesex.	Norfolk.	Plymonth.	Suffolk.	Worcester.
ST YEARS,			85,827	1,992	8,415	5,703	456	11,962	1,721	4,805	2,576	14,526	4,974	3,434	19,165	10,598
January,	•	•	7,805	260	27.1	518	41	1,053	168	482	222	1,258	418	345	1,779	995
February,.	•	•	6,197	148	286	356	\$	808	113	442	172	1,011	342	213	1,556	715
March,		•	4,468	132	181	908	88	689	139	261	151	703	232	201	867	573
April,	•	•	6,350	139	239	364	17	851	151	342	215	1,094	380	239	1,490	818
Мау,	•	•	7,852	144	288	477	31	896	162	474	232	1,235	420	258	1,686	22.6
June,	•	•	7,509	122	237	240	88	1,084	120	880	210	1,862	458	297	1,695	976
July,	•	•	6,180	104	239	479	41	606	100	847	172	1,036	333	226	1,465	729
August,	•	•	5,630	82	190	375	94	789	91	288	161	948	328	189	1,447	669
September, .	•	•	7,216	2.6	880	444	36	1,031	118	395	215	1,358	428	275	1,652	837
October,	•	•	8,240	149	357	525	65	1,090	156	457	241	1,417	511	280	1,961	1,081
November,	•	•	10,908	846	379	763	48	1,562	238	268	347	1,883	675	544	2,227	1,330
December, .	•	•	7,289	262	305	551	#	1,122	159	859	237	1,212	444	852	1,387	905
Unknown,	•	•	183	4	118	10	ı	5	ဆ	10	-	6	1	15	တ	12

## TABLE XVI.—MARRIAGES.—SIX YEARS—1865-70.

## Exhibiting the Social Condition and Ages of Parties Married during the Six Years, 1865-70.

## AGGREGATE-Of all Conditions.

10					AGE	OF FE	MALI	28.							
AGE OF MALES.	ALL AGES.	Under 20	20 to 25	25 to 80	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	<b>60</b> to <b>65</b>	65 to 70	70 to 75	Over 75	Unknown.
ALL AGES,	85,327	16617	37620	17282	6140	3347	1672	947	507	300	171	96	34	18	576
Und. 20,	1,556	1085	427	35	4	1	-	-	-	-			_	_	4
20 to 25,	31,740	10475	18141	2,721	281	54	5	2	1	-	-	-	-	_	60
25 to 30,	26,732	3939	13554	7,778	1108	217	38	14	4	1	-	_	-	1	78
30 to 35,	10,702	808	3705				71	19	1	2	-	-	-	-	26
35 to 40,	5,506	207	1197	1,663	1359	831	190	38			4 1 1	-	-	-	13
40 to 45,	3,013	50	365	682	764	659	374	87	17	2	1	-	-	-	12
45 to 50,	2,138	24	145	343	450	566	348	209	30	12	1	1	-	-	9
50 to 55,	1,370	10	44	129	213	329	282	197	133	20	6	3	-	_	4
55 to 60,	897	7	21	43	106	176	183	164	100	74	15	3	-	1	4
60 to 65,	630	1	6	11					118		42			1	3
65 to 70,	354	-	5 2	6	12	30	29	57	59		48	41	8	-	6
70 to 75,	206		2	-	3	9	16	28		37	33	21	19	6	1
75 to 80,	78	-	-	1	-	1	7	- 8	5	9	20	17	4	4	1
Over 80,	17	-	-	-	-		4	2	3	1	-	2	-	2	2
Unk., .	388	11	8	4	2	3	1	1	1	-	1	-	-	3	353

## (A.) First Marriage of both Parties.

ALL AGES,	66,310	15879	84133	12643	2473	665	163	53	26	6	6	1	2	1	259
Und. 20,	1,520	1081	407	28		_	_	_	-	-	_	_	_	-	2
<b>20</b> to 25,	30,402	10323	17577	2,291	148		-1	-	-	-	-	-	_	-	48
25 to 30,	23,527	3669	12527	6,550	640	79	10	5	1	_	-	-	-	1	45
80 to 35,			2816	2,710	934	132	16	4	-	_	-	-	_	_	15
35 to 40,	2,272	118		773	483	221	32	6	1 5	-	-1	-	_	_	8
40 to 45,		24	117	193	185	118	48	11	5	1	-	-	_	-	4
45 to 50,	281	7	39	70	61	54	81	13	2	-	1	-	_	_	8
<b>50</b> to 55,	103	2	6	19	17	29	12	9	6	2 2	-	-	-	_	1
55 to 60,	46	2	5	7	1	11	11	2 2	4	2	-	-	_	_	1
60 to 65.	14		_	_	1	1	2	2	4 3 3	_	4	-	1	-	_
65 to 70.	8	_	1	_	1	-1	1	-	3	_	1	1	_	_	_
70 to 75.	8 3	_	_	_	_	-	-1	1	-	1	-	_	1	_	_
75 to 80,	1	_	_	1	_	-	-	-	-	-	-	-	_	_	_
Over 80,	_	_	_	_	_	-	-	-	_	-	_	_	_	_	_
Unk., .	157	10	3	1	_	-	-	-	1	_	-	_	_	-	142
								i		- 1	- 1				l
	<del></del>	<u> </u>			·					-	<del></del>			_	

TABLE XVI.—Continued.

## (B.) First Marriage of Male and Second Marriage of Female.

<b>1</b>						AGE (	F FE	MALE	8.						
A 6E OF MALES.	ALL AGES.	Under 20	30 to 35	25 to 30	80 to 85	85 to 40	<b>40</b> to <b>45</b>	45 to 50	<b>50</b> to <b>55</b>	<b>55</b> to <b>60</b>	<b>60</b> to <b>65</b>	65 to 70	70 to 75	Over 75	Unknown.
ALL AGES,	4,543	63	839	1508	1084	594	254	101	35	13	10	1	1	_	40
Und. 20,	31	2	19	7	2	1	_	_	_	_	_	_	_	_	_
20 to 25,	938	41	378	351	123	33	4	2	1	_	-	_	-		5
25 to 30,	1,478	19	282	673	345	113	24	2 6	1 3	_	-		_	-	18
80 to 35,	963	1	99	315		151	37	9	1 2 7	2	$\exists$	_	_ i		8
85 to 40,	564	-	40	111	174	159	55	17	2	-	3 1 - 1 3 2	-	-	_	3
40 to 45,	271	_	12	32	58	69	67	25	7	-	1	_	-	-	-
45 to 50,	148	-	6	10	18	41	41	22	7	3	*	_	_	-	_
50 to 55,	73	_	1	7	12	13	14	13	7 8	3 8 8	-	_	-	-1	2
55 to 60,	31	-1	1	2	2 3	10	7		1	8	1	-	-	-	_
60 to 65,	19	-	_	_	3	2		4 1 2	4	2	3	-	_	-1	_
65 to 70,	7	-	_	_	-		4	2	1	_i	2	1	-	i	_
70 to 75,	19 7 3	-1	_	_	1	1	-	-	_	-	-	_	1	-	_
75 to 80,		-	_	_	_		-	_	-	-	-	_	-	-	_
Over 80,	1	-	_	_	_	-	-	_	_	-	4	_	_	-	1
Unk.,	16	-	1	_	1	1	-	-	_	-	-	_	-	_	18

## (C.) Second Marriage of the Male but First Marriage of the Female.

ALL AGES,	8,628	630	2345	2346	1504	924	481	222	91	51	21	11	_	1	51
Und. 20,	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
20 to 25,	294	92	146	51	2	1	1	-	-	_	_	-	_	-	1
25 to 30,	1,373	240	653	411	59	. 6		1	_	1	-	-	_	_	2
80 to 35,	1,870	156	728	622	310	45	5	-	_	_	-	_	_	-	4
85 to 40,	1,773	87	466	591	416	178	29	1	_	_	_	-	_	_	5
40 to 45,	1,210	25	209	363	301	218	74	15	2	1	-	-	_	-	2
45 to 50,	892	15	88	201	219	215	100	47	. 2	3	-	-	_	_	2
50 to 55,	530	8	32	74	108	138	89	50	30	1	_	-	_	_	-
55 to 60,	324	8 5	12	21	67	73	70	48	16	10	2 7	-	-	_	-
60 to 65,	177	1	4	7	13	31	41	34	21	14	7	2	_	1	1
65 to 70,	97	_	2 2	5	7	14	12	16	13	15	5	2 6	_	_	2
70 to 75,	31	_	2	_	1	1	5	7	5	6	3	1	_	_	_
75 to 80,	13	_	_	_	_	2	2	2	1	_	5 3 4	1 2	_	_	_
Over 80,	5	_	_	_	_	1	2	1	ī	_	_	_	_	_	
Unk., .	39	1	3	_	1	1	1	_	_	-	_	_	_	_	82
		_				_	_								_
		_	<u>'</u>												=

TABLE XVI.—Concluded.

## (D.) Subsequent Marriage of both Parties.

4					-	AGE C	F FE	MALE	8.			_			
Aer of Mai	ALL AGES.	Under 20	36 to 36	25 to 20	<b>80</b> to 85	85 to 40	40 to 45	45 to 50	50 to 55	<b>55</b> to <b>60</b>	<b>60</b> to <b>65</b>	65 to 70	70 to 75	Over 75	Unknown.
ALL AGES,	5,500	22	252	781	1059	1151	821	<b>57</b> 0	354	227	184	82	81	16	50
Und. 20, 20 to 25, 25 to 30, 80 to 35, 85 to 40, 40 to 45, 45 to 50, 50 to 55, 55 to 60, 60 to 65, 65 to 70, 70 to 75, 75 to 80, Over 80, Unk.	54 277 569 890 812 810 658 495 418 241 168 64	5 7 6 2 1 1 - -	22 67 56 56 27 12 5 3 2	20 118 210 184 91 62 28 18 4			13 74 184 176 166 95 76 15 11 5	2 6 14 36 127 124 110 84 39 20 6	- - 1 8 19 88 79 90 42 26 4	- - 6 14 59 72 37 29	- - 1 - 6 12 28 40 80 16	1 2 8 6 33 20 15 2	- - - 2 8 17 4	- - - 1 - 6 4 2 8	1 1 1 4 8 1 8 2 4 1 1 1 27

## (E.) Conditions of Parties not stated.

								i		1		i		1	
All Ages,	<b>34</b> 6	28	51	54	20	18	3	1	1	8	-	1	-	-	176
Und. 20,	5	2		-	_	_	-	╎ -	_	_	-	-	_	-	2
20 to 25,	52	14		8	2	-	-	_	-	-	-	-	_	-	10
25 to 80,	77	4	25	26	5		-	! -	-	! -	-	-	-	_	17
80 to 35,		2	6		7	2	_	- 1	۱ –	i -	-	i -	-	_	4
85 to 40,	30 7	_	_	4	1	ĺ	_	-	۱ -	_	_	-	_	_	1
40 to 45,	14	_	-	3	3	1 5	1	_	-	_	-	_	_	_	. 2
45 to 50,	14 7	1	-	_	2	3 1	_	_	۱ –	_	_	-	_	_	1
50 to 55,	6	_	_	1	_	1	1	1	1	-	_	1	_	_	_
55 to 60,	1	_	-	_	-	1	_	_	۱ –	_	-	_	_	۱ –	۱ –
60 to 65,	2	_	_	_	_	_	1	i –	-	1	_	l -	_	۱ –	_
65 to 70,	1		_	_	_	_	_	l _	l -	1	_	_	_	_ ا	_
70 to 75,	1	_	_	_	· -	_	· _	_	_	1	_	-	_	_	_
75 to 80,	_	, _	_	_	_	_	_	-	_	_	_	_	_	_	_
Over 80,	_	_	_	_	_	_	_	_	l –	_	_	_	_	-	_
Unk.,	143	_	1	8	_	_	_	_	_	_	_	_	_	_	139
	3.20													ŀ	

TABLE XVII.-DEATHS.-SIX YEARS-1865-70.

Distinguishing by Counties, by Months, and by Sex, the registered Number of Persons who have died during the Six Years, 1865-70; also for

Total Number.
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Sex
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6 Years. Months.	ж М		Percentage.	State.	.eldatarraß	Berkehire.	.loteh&	Dukes and Nantucket	Essex.	Frankilo.	Hampden.	erldagmaH	Middlesex.	Morfolk.	Plymouth	Baffolk	Worcester.
•g.	Totals, .		100-00	151,547	8,097	5,753	10,539	953	19,880	3,102		4,103	27,671	10,859	6,684	32,365	19,102
186	Males, .	•	49.74	75,883	1,580	_	5,288	475	9,742	1,446		1,979	13,510	5,047	9,350	16,526	9,569
Z	Females, .	•	20:10	75,920	1,497		5,286	478	10,100	1,647		2,108	14,138	5,294	3,295	15,832	9,498
9	Unknown,	•	97.	747	25		90	1 5	200	3 6		16	22.2	25	61	- 072	
•1	Moles	•	10.7	11,850	110		464	37	788	114	981	149	1 189	414	900	2,540	710
ısl	Females.		8.88	5,851	66		416	37	2002	128		152	1.094	405	272	1.257	669
_	Unknown.	•	10	11	_	_		1	2	•		ı		C)	-	1	C3
, <u> </u>	Totals,	•	7.51	11,381	251			73	1,489	208		258	2,145	8	470	2,456	1,426
·q	Males, .	•	8.72	5,630	135			31	246	26		124	1,020	888	558	1,275	682
Fe	Females, .	•	378	5,786	115			45	743	107		134	1,124	410	239	1,180	741
_	Unknown, .	•	Ģ	15				ı	١	0		ı	-		01	-	တ
, <u> </u>	Totals,	•	8-39	12,714	256	_		95	1,659	258		395	2,297	850	634	2,772	1,542
.71	Males, .	•	4 05	6,139	128			40	738	127		183	1,088	405	321	1,394	768
M	Females,	•	4-33	6,554	126			55	918	129		210	1,208	416	313	1,378	770
	Unknown,	•	<b>.</b>	21	01			ı	တ	01		01		01	1	•	4
C	Totals,	•	7.64	11,580	224			8	1,429	194		834	1,993	784	298	2,571	1,487
.10	Males,	•	3.82	5,791	114	_		4	717	86		153	950	829	305	1,335	759
γľ	Females, .	•	8.81	5,772	109	_		98	711	98		180	1,041	424	295	1,236	728
	Unknown, .	•	•	17	-			1	_	•		<b>,</b>	01		-	•	10
ت,	Totals,	•	7.55	11,448	202	_		100	1,487	252		321	1,976	280	532	2,529	1,442
· À·	Males, .	•	8.78	5,738	116	_	887	51	721	116		153	866	88	257	1,296	762
M	Females, .	•	8-77	5,703	8			48	784	183		168	078	408	275	1,288	ෂී
ت.	Unknown, .	•	1		_	_		•	C/S	<del>∞</del>			1	<b>-</b>	•	•	•

	1 2,148 1,250	1.058	CN CN	8,277	1,683	1,594	1	8,447	1,798	1,647	67	2,942	1,507	1,434		2,649	1,340	1,309	1	2,541	1,297	1,244	1	2,487	1,224	1,262	_	1	1	,	_
	708 458			_	_				_		_		_	_	_	_			_	_				_		_	_		_		_
	8 1,902	_	_		_		_	_							_			_	_		_					_		11 2	3 2	8	0
_	262	_			_		_		_	_		_	_	_		_					_			_				<b>60</b>	63	<u>م</u>	_
_	30 102			_	_	_		_		_								_		_	_	_	_		_					_	_
-	29 1,000	_	-		_	_	_							_	_		-			_				_			_				_
-	827	_				_		=				_													_		_	_	_		_
_	112 208	_		_		_		_					_							_	_			_	_	_			_		_
10.078 11	5,042	5,011	83	13,621	6,936	6,657	58	17,144	8,629	8,490	52	15,078	7,434	7,604	35	18,137	6,565	6,555	17	11,648	5,674	5,959	15	11,777	5,768	2,987	83	118	89	41	0
6 65	888	8.31	Ģ	8 88	4.58	4.40	Ģ	11.81	5.70	2 60	Ş	9-94	4 90	20-5	Ş	8.67	4.83	4.33	-01	4.69	8 75	3.93	Ģ	7.7.7	381	8.95	Ģ	80	05	ဇ္	-
Totals.	Malen,	Femalce,	Unknown,	Totals,	Males,	Females,	Unknown, .	Totals,	Males,	Females,	Unknown, .	Totals,	Males,	Females,	Unknown, .	Totals,	Males,	Females,	Unknown.	Totals,	Males,	Females,	Unknown, .	Totals,	Males,	Females,	Unknown, .	Totals,	Males,	Females,	Thenown
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19

TABLE XVIII.—DEATHS.—SIX YEARS—1865-70.

Distinguishing by Counties, by Age, and by Sex, the registered Number of Persons who have died during the Six Years, 1865–70; also for the

v Ke

All Ages.

Under 1.

1 to 3.

S to 3.

3 to 4.

XXIXTH REGISTRATION REPORT. Γ1870. 420 214 206 -741 Worcester. 32,365 16,526 15,832 8,010 4,305 3,698 1,496 25 646 808 808 828 429 399 Suffolk, ,295 19 1 8823 3,350 1,072 590 463 19 365 187 178 88 Plymouth entire State, the Percentage of the Numbers in each specified Age (distinguishing Sxx), to the Total Number. 10,359 5,047 5,294 18 2,061 1,080 964 17 785 377 358 838 154 182 237 115 Morfolk. 27,671 13,513 14,135 23 5,745 3,140 2,585 20 2,071 1,072 989 940 502 437 4,103 1,979 2,108 16 214 98 116 244 8557 853 293 11 844 Hampshire 7,959 4,002 3,943 88 10 1 ,735 941 784 10 8347 22 234 24 25 810 152 157 Hampden. 28 48 1 48 48 1 1,647 384 199 177 8 \$25 L Franklin. 19,880 9,742 10,100 88 4,214 2,259 1,921 34 839 813 826 481 256 224 398 744 653 147 953 475 478 849 1 1017 1002 Mantucket Dukes and 2,055 1,118 922 15 10,539 5,238 5,286 15 737 884 853 349 191 158 8118 Brietol. 5,753 2,919 2,804 30 2882 357 212 144 1 Berkshire. 3,097 1,580 1,497 20 161 181 19 8231 1 22 2 1 Barnatable. 11,130 5,782 5,342 6 3,422 1,732 1,688 75,386 75,917 244 81,326 16,981 14,128 217 5,215 2,692 2,520 3 151,547 BIATE Percentage. 3·44 1·78 1·66 49.75 50.09 20.66 11.20 9 32 • 14 7.35 3.82 3.52 0.1 2:28 1:14 1:12 Unknown, . BEX. Unknown, Unknown, Unknown, Unknown, Totals, Males, Females, Females, Females, Pemales, Females, Totals, Totals, Totals, Males, Totals, Males, Males, Males,

282 138 144	6,766 3,645 3,087 34	733 371 361 1	488 232 256	740 328 412	1,917 892 1,025	1,485 633 802
598 314 284	13,556 7,190 6,359 7	1,327 685 642 -	577 299 278	1,082 508 574	3,612 1,761 1,851	3,104 1,587 1,517
79 37 42	1,819 965 835 19	212 105 107	145 66 79	260 105 155	652 308 344	495 235 260
165 92 73	8,584 1,818 1,698 18	486 257 229	231 107 124	877 177 200	1,023 458 565	826 355 471
484 217 217	9,801 5,237 4,543 21	1,278 652 626 -	808 808 808	1,022 435 587	2,901 1,273 1,628	2,428 1,085 1,343
<b>4</b> 28	1,117 576 578 530 11	167 84 83 -	844	182 70 111	392 175 217	351 155 196
128 70 83 83	2,994 1,562 1,419 13	848 191 157	177 111 66	346 148 198	848 410 433	627 264 363
218 18	704 341 354 9	116 64 52 -	87 85 52	130 59 71	811 126 185	219 88 120
324 166 158	7,056 3,738 3,282 3,82	882 429 453	449 198 251	806 353 453	2,061 920 1,141	1,561 687 874
138	134 73 61	38 14 24	21 7 14	24 15 9	94 59 35	69 29 29
88 88 88 88	3,539 1,884 1,640 15	410 228 187	240 101 139	389 147 242 -	999 456 543	782 854 428
94 87 57	1,747 981 740 26	244 136 107	167 85 82	238 104 134	565 264 301	427 181 246
188	721 891 811 19	108 61 42 -	73 33 40	152 87 65 -	870 198 172	241 108 183
2,395 1,214 1,181	58,488 28,401 24,859 228	6,344 3,272 3,070	3,349 1,621 1,728	5,748 2,536 3,211	15,740 7,300 8,440	12,565 5,783 6,782
1:58 :80 :78	35.29 18.74 16.40	4:19 2:16 2:03	2.21 1.07 1.14	3.79 1.67 2.12	10-89 4-82 5-57	8.29 3.82 4.47
• • • •	• • • •	• • • • •	• • • •	• • • • •		• • • •
	• • • •					
Totals, Males, Females,	Totals, Males, Females, Unknown,	Totals, Males, Females, Unknown,	Totals, . Males, Females,	Totals, Males, Females, Unknown,	Totals, Males, Females,	Totals, Males, Females,
4 to 5.	Under 5.	2 to 10.	10 to 12.	18 to 20.	30 to 30.	30 to 40.

TABLE XVIII.—Concluded.

Age.	8 E X.		Percentage.	Brate.	Barnetable.	Berkehire.	Bristol	Dukes and Nantacket.	Essex.	.allafast¶	Hampden.	Hampshire.	Middlesex.	Nortolk.	Plymouth.		Saffolk.
.0d ot 0±	Totals, Males, Females, Unknown,	• • • •	6.91 8.49 8.42	10,471 5,284 5,186	198 96 102	363 166 196	748 404 844	25 25 1	1,203 606 597 -	224 101 123	513 260 253 -	288 131 152	1,925 936 989 -	674 826 848	-	416 209 207 _	
50 to 60.	Totals, Males, Females,	• • •	8.55 3.11	10,085 5,881 4,704	220 109 111	890 207 188	755 416 839	82	1,283 684 599	245 117 128	494 252 242	297 156 141	1,842 958 889	701 880 <b>3</b> 21		468 263 205	468 2,151 268 1,222 205 929
.67 oz 08	Totals, Males, . Females,		3.99 3.99 3.80	11,809 6,044 5,765	310 165 145	587 290 247	924 483 441	121	1, <b>58</b> 8 786 752	325 159 166	574 208 276	876 201 175	2,149 1,068 1,081	843 483 410		658 846 312	658 1,913 846 941 312 972
70 to 90.	Totals, Males, Females,	• • •	7.89 8.70 4.19	11,957 5,800 6,357	392 184 208	526 256 270	927 428 499	288	1,599 720 879	386 186 200	284 284 284	471 226 245	2,027 904 1,123	876 429 447		843 443 400	843 1,488 443 605 400 883
.06 ot 08	Totals, Males, Females,	• • •	2008 2008 2008	7,635 8,158 4,477	240 112 128	873 170 208	610 245 865	123 47 76	1,086 421 645	281 180 151	351 162 189	285 128 157	1,283 516 767	223 869		570 258 <b>3</b> 12	570 784 258 268 312 516
.00E on 00	Totals, Males, Females,	• • •	\$6.5	1,853 445 908	46 15	79 28 51	118 45 73	22 4 12	179 59 120	48 18 30	54 19 85	82 7 83	240 160	116 82 82		100 85 85	100 117 85 41 65 76

6 6 6	88.89
147	11
2	24 11 13
	. 48 27 1
13	150 65 83 83
	25 62 8 28 4
61101	1 28 25 25
၈ ၊ ၈	122 1
<b>6</b> 1 10	241 190 49 2
G1 1 G1	► to 4
20-4	93 127 1
∞ c₁ ∞	8 4 8 cı
81-1	600 ° 1
25 TS	925 537 376 12
• ទំនំនំ	• • • • • • • • • • • • • • • • • • • •
	• • • •
	• • • •
Totals, Males, Females,	Totals, Males, Females, Unknown,
Over 100.	Not stated.

### APPENDIX.

#### LAWS

#### CONCERNING THE REGISTRATION OF BIRTHS, MARRIAGES AND DEATHS.

#### General Statutes—Chapter 21.7

#### OF THE REGISTRY AND RETURNS OF BIRTHS, MARRIAGES, AND DEATHS

- City and Town Clerks to obtain, record, and index facts concerning Births, Marriages, and Deaths.
- 2. Parents and others to give notice of Births. and Deaths.
- 8. Physicians to give Certificate of Cause of
- Death, when requested. Penalty.

  Sextons, Undertakers, &c., to make returns to Clerks of Cities and Towns. Clerks to give Certificate of Registry of Death to the Person having charge of funeral rites pretiminary to Interment, for delivery, &c. If Interment takes place without such Certificate, notice thereof to be given, under penalty of twenty dollars.

  5. Clerk annually to transmit certified Copies
- of Records to Secretary.

SECTION

- 6. Record or Certificate of Clerk to be prime
- facie evidence in Legal Proceedings.

  7. Clerks—Fees of, payable by City or Town;
  Accounts of, to be certified by Secretary. Penalty for neglect of duty.

  8. Superintendents of State Almshouses to
- record and return to Secretary, births and deaths therein.
- 9. Secretary to furnish Blank Books for Records and Forms for returns, with Instructions. Clerks to distribute the Blank Forms for
- 10. Secretary,—to cause Returns to be bound, &c.; to Report annually to Legislature, &c.; to do all other acts necessary to secure the execution of the provisions of this chapter.

  11. Registers may be chosen, in certain cases, in
- place of Town Clerks.

The clerk of each city and town shall receive or obtain, Section 1. and record, and index, the following facts concerning the births, marriages, and deaths, therein, separately numbering and recording the same in the order in which he receives them, designated in separate columns:

In the record of births, the date of the birth, the place of birth, the name of the child, (if it have any.) the sex and color of the child, the names and the places of birth of the parents, the occupation of the father, the residence of the parents, and the date of the record;

In the record of marriages, the date of the marriage, the place of marriage, the name, residence and official station of the person by whom married, the names and places of birth of the parties, the residence of each, the age and color of each, the condition of each, (whether single or widowed,) the occupation, the names of the parents, and the date of the record;

In the record of deaths, the date of the death, the name of the deceased, the sex, the color, the condition, (whether single, widowed, or married,) the age, the residence, the occupation, the place of death, the place of birth, the names and places of birth of the parents, the disease or cause of death, the place of burial, and the date of the record.

Section 2. Parents shall give notice to the clerk of their city or town of the births and deaths of their children; every householder shall give like notice of every birth and death happening in his house; the eldest person next of kin shall give such notice of the death of his kindred; the

keeper of a workhouse, house of correction, prison, hospital, or almshouse, except the State almshouses at Tewksbury, Bridgewater, and Monson, and the master or other commanding officer of any ship shall give like notice of every birth and death happening among the persons under his charge. Whoever neglects to give such notice for the space of six months after a birth or death, shall forfeit a sum not exceeding five dollars.

Section 3. Any physician having attended a person during his last illness, shall—when requested within fifteen days after the decease of such person—forthwith furnish for registration a certificate of the duration of the last sickness, the disease of which the person died, and the date of his decease, as nearly as he can state the same. If any physician refuses or neglects to make such certificate, he shall forfeit and pay the sum of ten dollars to the use of the town in which he resides.

Section 4. Every sexton, undertaker, or other person having charge of a burial-ground, or the superintendent of burials having charge of the obsequies or funeral rites preliminary to the interment of a human body, shall forthwith obtain and return to the clerk of the city or town in which the deceased resided or the death occurred, the facts required by this chapter to be recorded by said officer concerning the deceased, and the person making such return shall receive from his city or town the fee of ten cents therefor.

The clerk, upon recording such facts, shall forthwith give to the person making such return, a certificate that such return has been made, which certificate such person shall deliver to the person having charge of the interment, if other than himself, before the burial when practicable, otherwise within seven days thereafter. When a burial takes place and no certificate is delivered as aforesaid, the sexton, undertaker, or other person having charge of the interment, shall forthwith give notice thereof to the clerk under penalty of twenty dollars.

SECTION 5. The clerk of each city and town shall annually on or before the first day of February, transmit to the secretary of the Commonwealth, certified copies of the records of the births, marriages, and deaths, which have occurred therein during the year ending on the last day of the preceding December.

Section 6. The record of the town clerk relative to any birth, marriage, or death, shall be *primd facie* evidence, in legal proceedings, of the facts recorded. The certificate signed by the town clerk for the time

being shall be admissible as evidence of any such record.

Section 7.\* The clerk shall receive from his city or town for obtaining, recording, indexing, and returning to the secretary of the Commonwealth, the facts in relation to a birth, twenty cents; a marriage, ten cents; a death, twenty cents for each of the first twenty entries, and ten cents for each subsequent entry, as the same shall be certified by the secretary of the Commonwealth; but a city or town containing more than ten thousand inhabitants may limit the aggregate compensation allowed to their clerk. He shall forfeit a sum not less than twenty nor more than one hundred dollars for each refusal or neglect to perform any duty required of him by this chapter.

Section 8. The superintendents of the State almshouses at Tewksbury, Bridgewater, and Monson, shall obtain, record, and make return of

<sup>•</sup> See chap. 188, on p. clv, following.

the facts in relation to the births and deaths which occur in their respective institutions, in like manner as is required of town clerks. The clerks of said towns shall, in relation to the births and deaths of persons in said almshouses, be exempt from the duties otherwise required of them by this

chapter.

SECTION 9. The secretary shall, at the expense of the Commonwealth, prepare and furnish to the clerks of the several cities and towns, and to the superintendents of the State almshouses, blank books of suitable quality and size to be used as books of record under this chapter, blank books for indexes thereto, and blank forms for returns, on paper of uniform size; and shall accompany the same with such instructions and explanations as may be necessary and useful. City and town clerks shall make such distribution of blank forms of returns furnished by the secretary as he shall direct.

SECTION 10. The secretary shall cause the returns received by him for each year to be bound together in one or more volumes with indexes thereto. He shall prepare from the returns such tabular results as will render them of practical utility, make report thereof annually to the legislature, and do all other acts necessary to carry into effect the provisions of this chapter.

Section 11. Any city or town containing more than ten thousand inhabitants, may choose a person other than the clerk to be registrar, who shall be sworn, and to whom all the provisions of this chapter concerning clerks shall apply. The returns and notices required to be made and given to clerks shall be made and given to such registrar under like penalties.

Section 12. The secretary of this Commonwealth shall prosecute, by an action of tort, in the name of the Commonwealth, for the recovery of

any penalty or forfeiture imposed by this chapter.

Section 13. Any city or town may make rules and regulations to enforce the provisions of this chapter, or to secure a more perfect registration of births, marriages, and deaths, therein.

#### [General Statutes—Chapter 106.]

#### OF MARRIAGE.

SECTION 7. Notice of Intention of Marriage to be entered

- with Town Clerk.

  8. Certificate of Record of Intention to be given to Parties by Clerk. Such certificate to be delivered to Person before whom Marriage is to be solemnized.

- to be solemnized.

  9. Certificate not to issue to certain Minore, except on application of Pareut, &c. Penalty.

  10. Clerk may require Affidavit of Age.

  11. Penalty for making False Statement.

  12. Parties living in State and Married out of it, to file certificate on return. Penalty.

  18. No Person to solemnize Marriage of a Minor, without consent of Parents, if any in the State commetent to act.

State competent to act.

- 14. Marriages, by Whom to be solemnized, and in what Place.
- Marriages among Quakers.
- 16. Persons solemnizing Marriage to keep Record and to make Returns to certain Town Clerks. Clerk to record all Marriages so returned. 17. Penalty for not making Returns.
- 18. Penalty for solemnizing a Marriage unlawfully.
- Penalty, on Pereon not authorized to Marry.
   Record of Marriage, or certified copy thereof, presumptive evidence of Marriage.
- [Marriage between certain relatives prohibited.] SECTIONS 1, 2 and 3. [Polygamy forbidden.] Section 4.
  - SECTION 5. [Marriage contracted by insane persons or idiots, void.]
- SECTION 6. [Marriages of persons marrying out of the State in order to evade, &c, void.

Section 7. Persons intending to be joined in marriage, shall, before their marriage cause notice thereof to be entered in the office of the clerk, or registrar of the city or town in which they respectively dwell, if within the State. If there is no such clerk or registrar in the place of their residence, the entry shall be made in an adjoining city or town.

Section 8. The clerk or registrar shall deliver to the parties a certificate under his hand, specifying the time when notice of the intention of marriage was entered with him, together with all facts in relation to the marriage required by law to be ascertained and recorded, except those respecting the person by whom the marriage is to be solemnized. Such certificate shall be delivered to the minister or magistrate in whose presence the marriage is to be contracted, before he proceeds to solemnize the same.

SECTION 9. If a clerk or registrar issues such certificate to a male under the age of twenty-one years, or a female under the age of eighteen years, having reasonable cause to suppose the person to be under such age, except upon the application or consent in writing of the parent, master, or guardian, of such person, he shall forfeit a sum not exceeding one hundred dollars; but if there is no parent, master, or guardian, in this State, competent to act, a certificate may be issued without such application or consent.

Section 10. The clerk or registrar may require of any person applying for such certificate, an affidavit sworn to before a justice of the peace for the county where the application is made, setting forth the age of the parties; which affidavit shall be sufficient proof of age to authorize the issuing of the certificate.

SECTION 11. Whoever applying for such certificate wilfully makes a false statement in relation to the age or residence, parent, master, or guardian, of either of the parties intending marriage, shall forfeit a sum not exceeding two hundred dollars.

SECTION 12. When a marriage is solemnized in another State between parties living in this State, and they return to dwell here, they shall, within seven days after their return, file with the clerk or registrar of the city or town, where either of them lived at the time, a certificate or declaration of their marriage, including the facts concerning marriages required by law, and for every neglect they shall forfeit ten dollars.

SECTION 13. No magistrate or minister shall solemnize a marriage, having reasonable cause to suppose either of the parties to be under the age mentioned in section nine, without the consent of the parent or guardian having the custody of the minor, if there is any in the State competent to act.

SECTION 14. Marriages may be solemnized by a justice of the peace in the county for which he is appointed, when either of the parties resides in the same county; and throughout the State by any minister of the gospel ordained according to the usage of his denomination, who resides within the State and continues to perform the functions of his office; but all marriages shall be solemnized in the city or town in which the person solemnizing them resides, or in which one or both of the persons to be married reside.

Section 15. Marriages among the people called Friends or Quakers may be solemnized in the manner heretofore used and practised in their societies.

SECTION 16. Every justice of the peace, minister, and clerk, or keeper of the records of the meeting wherein any marriages among the Friends or Quakers are solemnized, shall make a record of each marriage solemnized before him, together with all facts relating to the marriage required by law

to be recorded. He shall also between the first and tenth days of each month return a copy of the record for the month next preceding, to the clerk or registrar of the city or town in which the marriage was solemnized, and shall when neither of the parties to a marriage resides in the city or town in which the marriage is solemnized, return a copy of the record of such marriage to the clerk or registrar of the city or town in which one or both of said parties reside. All marriages so returned shall be recorded by the clerk or registrar.

Section 17. Every person neglecting to make the returns required by the preceding section, shall forfeit for each neglect not less than twenty

nor more than one hundred dollars.

SECTION 18. A justice of the peace or minister who joins persons in marriage contrary to the provisions of this chapter, knowing that the marriage is not duly authorized, shall forfeit not less than fifty nor more than one hundred dollars.

SECTION 19. Whoever undertakes to join persons in marriage knowing that he is not authorized so to do, shall be imprisoned in the jail or confined to hard labor for a term not exceeding six months, or pay a fine of not less than fifty nor more than two hundred dollars.

Section 20. [Unintentional informality does not invalidate marriage

in other respects lawful.]

SECTION 21. The record of a marriage, made and kept as prescribed by law by the person before whom the marriage is solemnized, or by the clerk or registrar of any city or town, or a copy of such record duly certified, shall be received in all courts and places as presumptive evidence of such marriage.

SECTION 22. [Admission of respondent, general repute, &c., competent

evidence to prove the fact of marriage.]

SECTION 23. [Marriage in foreign countries by a consul or diplomatic agent valid, and certificate of such consul or agent presumptive evidence thereof.]

## [General Statutes—Chapter 29.]

#### OF THE PUBLIC RECORDS.

SECTION 10. [County, city and town records and files may be inspected and copied.]

SECTION 13. [Penalties; . . . . . for altering or mutilating any record, paper, or written document, a sum not exceeding fifty dollars,—for wrongfully detaining records, and other documents, fifty dollars.]

#### [General Statutes—Section 1 of Chapter 174.]

Sentence when no punishment is provided.

SECTION 1. In cases of legal conviction, where no punishment is provided by statute, the court shall award such sentence as is conformable to the common usage and practice in this State, according to the nature of the offence, and not repugnant to the constitution.

#### [Chapter 138.]

## AN ACT CONCERNING THE REGISTRY AND RETURN OF MARRIAGES, BIRTHS AND DEATHS.

Section 1. The clerk of each city and town, (except in such cities and towns as choose a registrar, under the eleventh section of the twenty-first chapter of the General Statutes, in which cases the provisions of this act shall apply to the registrar,) for receiving or obtaining, recording, indexing and returning the facts relating to marriages, births and deaths occurring therein, shall be entitled to receive therefrom the sums following, viz.: for each marriage, fifteen cents; for each birth, thirty cents; for each death returned to him by the persons specified in sections two, three and four of chapter twenty-one of the General Statutes, twenty cents for each of the first twenty entries, and ten cents for each subsequent entry; for each death not so returned, but by him obtained and recorded, twenty cents.

SECTION 2. Chapter ninety-six of the acts of the year eightern hundred and sixty-five, and so much of section seven of the twenty-first chapter of the General Statutes as is inconsistent herewith, are hereby repealed.

Section 3. This act shall take effect upon its passage.

[Approved April 7, 1866.

#### [Chapter 58.]

#### AN ACT RELATING TO THE MARRIAGE OF NON-RESIDENT PARTIES.

Section 1. Persons living without the Commonwealth and intending to be joined in marriage within the Commonwealth, shall, before their marriage, cause notice of their intention to be entered in the office of the clerk or registrar of the city or town in which they propose to have the marriage solemnized; and no marriage between such parties shall be solemnized until they have delivered to the justice of the peace, or minister in whose presence the marriage is to be contracted, a certificate from such clerk or registrar, specifying the time when notice of the intention of marriage was entered with him, together with all the facts in relation to the marriage required by law to be ascertained and recorded, except those respecting the person by whom the marriage is to be solemnized.

SECTION 2. Marriages may be solemnized by a justice of the peace

in the county for which he is appointed.

SECTION 3. A justice of the peace or minister who joins persons in marriage contrary to the provisions of this act shall forfeit not less than fifty nor more than one hundred dollars.

[Approved March 11, 1867.

#### STATISTICAL NOSOLOGY

#### ADOPTED FOR REGISTRATION IN MASSACHUSETTS.

The following plan of a Nomenclature and Classification of Diseases does not essentially differ from that authorized by the Registrar-General of England, to be used in the preparation of the "Weekly Return of · Births and Deaths in London," and is also, with slight modifications, identical with that embodied in a report drawn up by William Farr, Esq., M. D., of London, for the consideration of the International Statistical Congress which met at Paris in September, 1855; which report was printed in the Appendix to the Sixteenth Registration Report of the Registrar-General, England.

[NOTE.—This page and those that follow contain two lists of causes of death. The first,that on the left side,—may be called the TABULAR LIST, and comprises all the heads which it is proposed to admit into the complete tables (iX. and X.) and under which ALL deaths, from whatever cause are finally distributed. It represents those diseases which, under the same terms, or terms strictly synonymous with them, are found in practice to occur most

frequently.

The SUPPLEMENTAL LIST is subordinate to the first, and contains the principal special diseases which it may be considered desirable to note. The figures in this list indicate the corresponding heads of the tabular list under which such diseases are ultimately arranged.

Table VIII. includes both the Tabular and Supplementary lists; Tables IX. and X. the

Tabular list only.]

#### CAUSES OF DEATH.

		ת ע	ist.					PLEMENTAL LIST.
CLAS	SS I. ZYM	OTIC	Dıs	EAS	E8.		Of Dis	eases of Special Character, or rarely fatal.
(	ORDER I-	-Mias	mati	c.				
L 1.—1. Sn	nallpox,						I. 1.—1.	Vaccination not stated.
2. M	easles, .							Smallpox, (2d attack.)
3. Sc	arlatina,				•		1	After vaccination. Erysipelas, &c., after vacci
	phtheria,				•			nation.
5. Q	uinsy,				•			Chickenpox.
6. Cr	oup,				•			Miliaria.
7. W	hooping Co	ugh,						Angina maligna.
8 T	phus (and	Infar	alita	Fave	r )		4.	Mumps.
	rysipelas,			1.010	***/	:	8.	Typhoid fever.
10. M	etria (or Pu	IAPNA	ral F	ever	٠. i	:	9.	Phiebitis.
	arbuncle,			CICI	"	:		Pyemia.
	•	•	•	•	•	•		Hospital gangrene. Erythema.
12. In	fluenza,	•	•	•	•	•		Ery mema.
13. D	ysentery,							
	arrbœa,		•			•		
15. Cl	bolera Infan	tum,		•	•		i	
16. C	holera,	•		•		•		
17. A	gue,		_	_	_			
18. R	emittent Fe	ver.		•	•	•	18.	Yellow fever.
	heumatism,		-		·	•		Rheumatism, with perical ditis, or disease of heart

## APPENDIX.

# CAUSES OF DEATH—(CONTINUED.)

TABULAR LIST.	SUPPLEMENTAL LIST.
CLASS I.—(Continued.)  ORDER 2.—Enthetic.  1. 2.—1. Syphilis,	I. 2.—1. Gonorrhœa. Purulent ophthalmia. 4. Malignant pustule. Necusia, (usually from dissection wounds.)  I. 8.—1. Want of Breast Milk. 2. Rickets. Bronchocele.
ORDER 4.—Parasitic.  I. 4.—1. Thrush,	I. 4.—2. Porrigo. Scabics. Tape worm. Hydatids.  II. 1.—3. Soft cancer. Sweep's cancer. Melanosis. Other kinds of cancer. Polypus (part not stated.) Lupus. 5. Bed-sore. Dry gangrene.  II. 2.—1. Psoas (lumbar) abscess. White swelling.
3. Phthisis (Consumption of Lungs,) 4. Hydrocephalus,  CLASS III. Local Diseases.  Order 1.—Nervous System.  III. 1.—1. Cephalitis, 2. Apoplexy, 3. Paralysis, 4. Insanity, 5. Chorea, 6. Epilepsy, 7. Tetanus, 8. Convulsions, 9. Brain Diseases,* &c.,	Cretinism. 2. Tubercular peritonitis. 3. Hæmoptysis. 4. Tubercular meningitis. 4. Tubercular meningitis.  III. 1.—1. Myelitis. 4. Monomania. Fright. Grief. Melancholia. Rage. 6. Hysteria. 8. Laryngismus stridulus. 9. Neuralgia. Ophthalmia. Otitis. Disease of spinal marrow. Necrencephalus. (Softening of Brain.)

Other diseases of the brain, or diseases of the nervous system, not otherwise distinguished, are referred to this head. Mutatis mutandis, the note applies to the corresponding heads in other Orders of this Class.

# CAUSES OF DEATH-(CONTINUED.)

TABULAR LIST.	SUPPLEMENTAL LIST.
CLASS III.—(Continued.)	
ORDER 2.—Organs of Circulation. III. 2.—1. Pericarditis,	III 9 1 Caratta
O Anousiam '	. III. 2.—1. Carditis. Endocarditis.
3. Heart Diseases,* &c.,	8. Hypertrophia. Angina pectoris. Syncope.
ORDER 3.—Respiratory Organs.	Arteritis. Hydropericardium.
III. 5.—1. Epistaxis,	III. 3.—2. Œdema glottidis.
III. 3.—1. Epistaxis,	4. Empyema.
3. Bronchitis.	.   Hydrothorax.
4. Pleurisy,	Diaphragmitis.
5. Pneumonia,	Pneumothorax.
6. Asthma, . ,	5. Pulmonary apoplexy.
7. Lung Diseases,* &c.,	V. Climaci b zibinima
ORDER 4.—Digestive Organs.	
III A _1 Contribin	
9 Entonitia	AAA WA GIOSSIGS
3. Peritonitis,	
o. remonius,	Pharyngitis. Œsophagitis.
4. Ascites,	5. Perforation of—
5. Ulceration of Intestines,	6. Congenital.
6. Hernia,	
7. Ileus,	
8. Intussusception,	Scrotal.
9. Stricture of Intestines,	Umbilical.
10. Fistula,	Ventral. 7. Constipation.
11. Stomach Diseases,* &c.,	11. Dyspepsia.
12. Pancreas Disease. & &c	Pyrosis.
13. Hepatitis,	Gastralgia.
14 Tounding	Hæmatemesis.
15 Tinen Disease # les	Melæna.
16. Spleen Disease, & &c.,	Hæmorrhoids.
	14. Gall-stones. 15. Cirrhosis.
ORDER 5.—Urinary Organs.	
III. 5.—1. Nephritis,	III. 5.—6. Cystirrhœa.
2. Ischuria,	7. Diuresis.
8. Nephria. (Bright's disease.)	Hæmaturia.
4. Diabetes, 5. Calculus, (Gravel, &c.,)	Dis. of prostate.
5. Calculus (Gravel, &c)	Dis. of bladder.
6. Cystitis, 7. Kidney Disease,* &c.,	
7. Kidney Disease + &c.	
•	
ORDER 6.—Generative Organs.	<b>_</b>
III. 6.—1. Ovarian Dropsy,	III. 6.—1. Ovarian tumor.
2. Disease of Uterus,* &c.,	2. Hysteritis, (Inflammation of womb.) Uterine tumor. Polypus uteri. Orchitis.
	Hydrocele.

## APPENDIX.

# CAUSES OF DEATH-(CONTINUED.)

TABULAR LIST.	SUPPLEMENTAL LIST.
CLASS III.—(Continued.)  ORDER 7.—Organs of Locomotion.  III. 7.—1. Arthritis,	III. 7.—1. Ostitis. Periostitis. 2. Fragilitas ossium. Mollities ossium. Caries. Necrosis. Exostosis.
ORDER 8.—Integumentary System.  III. 8.—1. Phlegmon,	III. 8.—1. Abscess (part not stated.) Boil. Whitlow. 8. Roseola. Urticaria. Eczema. Herpes. Pemphigus. Ecthyma. Impetigo. Peoriasis. Ichthyosis. Tumor (part not stated.)
CLASS IV. DEVELOPMENTAL DISEASES.  ORDER 1.—Developmental Diseases of Children.  IV. 1.—1. Stillborn, 2. Premature Birth and Infantile Debility, 3. Cyanosis, 4. Spina Bifida, 5. Other Malformations, 6. Teething, ORDER 2.—Developmental Diseases of	IV. 1.—2. Atelectasis. 5. Anus imperforatus. Cleft palate. Idiocy.
Women.  IV. 2.—1. Paramenia,	IV. 2.—1. Chlorosis. Climacteria. Menorrhagia. 2. Miscarriage. Abortion. Puerperal mania. Puerperal convulsions. Phlegmasia dolens. Cæsarian operation. Extra-uterine fætation. Flooding. Retention of placenta. Presentation of placenta. Deformed pelvis. Breast abscess.
ORDER 4.—Diseases of Nutrition.  IV. 4.—1. Atrophy and Debility,	

#### APPENDIX.

## CAUSES OF DEATH-(CONCLUDED.)

TABULAE	r Lis	T.			SUPPLEMENTAL LIST.
CLASS V. VIO  ORDER 1.—Accide V. 1.—1. Fractures and 2. Wounds, 3. Burns and Sc. 4. Poison, 5. Drowning, 6. Suffocation, 7. Otherwise,	ent or i	Neglige	nce.		V. 1.—1. Railroad accidents. 5. Lost at sea. 6. Asphyxia. Strangulation. 7. Exposure. Cold water. Frozen. Heat. Lightning. Surgical operation.
ORDER 2.—	-In Ba	ttle.			
ORDER 3.—	-Homic	ide.			:
Order 4	—Suici	de.		- 1	
V. 4.—1. Wounds,		•	•	•	
2. Poison, .		•	•		•
2. Poison, . 3. Drowning, 4. Hanging,		•	•	•	•
4. Hanging,		•	•		
5. Otherwise,	• •	•	•	•	
Order 5.	-Execu	tion.			
V. 5.—1. Hanging,		•	•		
V. 6.—Violent Deaths, ualty,").	not o	classed,	("(	: <b>85</b> -	
Sudden, cause u	nascer	tained,	•		

## # Including "Railroad Accidents."

NOTE.—Cases of "infantile fever" are classed with those of typhoid, relapsing, and other continued fevers, under one name "typhus." Cases of "rheumatic fever" are classed with "rheumatism;" of "hemorrhage," and "abscess," with the diseases of the organs affected. Cases of "neglect" and "cold," except when the result of privation, (Class I. 3.—1,) are placed (with notes) under deaths by "accident or negligence," (V. 1.—7.) As "stricture of the nrethra" is almost invariably the result of gonorrhoza, it is classed as I. 2.—2.

# THIRTY-FIFTH ANNUAL REPORT

OF THE

# BOARD OF EDUCATION,

TOGETHER WITH THE

THIRTY-FIFTH ANNUAL REPORT

OF THE

SECRETARY OF THE BOARD.

#### **BOSTON:**

WRIGHT & POTTER, STATE PRINTERS, No. 79 MILK STREET
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1872.



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## ERRATA.

32d page, 2d line from the top, by mistake in transferring, the sum given is \$5,382.79, instead of \$5,882.79.

34th page, 11th line of figures from the top, the sum should be \$220.00, instead of \$222.00. 53d page of Appendix, 8th column of figures, last line but one, 2,500 was omitted in transferring.

# ANNUAL REPORT.

The Board of Education respectfully submits to the legislature its Thirty-Fifth Annual Report, the Reports of the Visitors of the Normal Schools, and of the Treasurer, Secretary, and General Agent.

This Board, in the fulfilment of the duties imposed upon it of making suggestions as to the most practical means of improving and extending the efficiency of the system of popular education, has, at different times, urged upon the legislature the necessity of a thorough supervision of the Common Schools. It has been truly said that "the most important branch of administration, as connected with education, relates to school inspection." subject was fully discussed in the report of the Secretary for 1869, and has been referred to in subsequent reports of the Their suggestions have been partially Board and Secretary. adopted, and the necessity of such supervision has been so far recognized that most of the cities and several of the large towns of the Commonwealth employ a superintendent of schools. agency is "now exerting a more powerful influence than any other instrumentality in perfecting the character and giving efficiency to the schools." It has been introduced into most of our sister States, with equally beneficial results. While the benefits of the system are enjoyed by over forty cities and towns, the remaining number do not employ a superintendent. Most of them cannot afford the expense, but these very towns are the ones that most need such supervision, for the small towns cannot obtain as able and experienced teachers as the larger and wealthier places, and they have fewer persons of literary attainments able to devote their time and talents to these duties. They are also more heavily taxed in proportion to their valuation than the large cities. The last general court made an appropriation of

\$10,000 for the salary and expenses of agents who should undertake this work of supervision. It therefore became the duty of the Board to carry out the policy thus inaugurated, so that every town, however poor or however small, might enjoy the benefits of the system. It has been found difficult to procure gentlemen possessing the requisite qualifications for the duties.

A special agent was appointed by the Board in July last, as the director of art education, and is now engaged in the work of aiding the cities and towns in carrying out the requirements of the law of 1870 relating to the teaching of drawing in the Public Schools and the establishment of Evening Schools for the instruction of adult persons in mechanical drawing. His labors thus far have met with gratifying success.

A special agent has also been engaged for a limited time to visit the schools in the western counties, who is doing a good work, and it is hoped that others may soon be put into the field. If the plan meets with the success which is confidently anticipated, it will gradually lead to the establishment of a system of local county or district agents. These will not assume any of the powers now possessed by the school committees or relieve them of any of their duties, but coöperate with them whenever their services are required, by suggesting plans and locations for school-houses, organizing schools, conferring with the teachers, holding meetings for discussion of topics appertaining to their labor, and advising in the classification and grading of schools.

It is not enough, however, to provide superintendents and school-houses and to require compulsory attendance, unless the teachers are qualified for their work. None of us employ an agent or servant to perform a service, who has not some experience or qualification for the position, yet we constantly hire persons to teach our children, who have never had any training or instruction in the theory and art of teaching. The State has built and partially equipped four Normal Schools for the preparation of teachers. The school buildings at Salem and Bridgewater were enlarged last year and now will seat 200 pupils each. Boarding-houses have been recently erected at Bridgewater and Framingham, which have been productive of great good, in cheapening the price of board and thereby increasing the number of pupils and bringing them more immediately under the care of the principals. The school at Bridgewater has increased so rap-

idly, that there is now the same need for enlarging the boarding-house that there was for its construction. The school at Westfield languishes for want of a boarding-house, more than half of the pupils being compelled to board themselves. The house at Bridgewater should be enlarged, and a new one constructed at Westfield the present year.

The last general court established a fifth Normal School at Worcester. The ground has been selected, plans agreed upon and contracts partially made, and it is expected that the buildings will be ready for occupancy before another year. The benefits that have resulted from the establishment of Normal Schools are so fully appreciated that nothing need be said in their behalf. Between 900 and 1,000 pupils can be taught in these schools, and more than 200 graduated every year.

While the Normal Schools are performing a most valuable service in raising the standard of testching throughout the whole Commonwealth, their capacity to educate trained teachers has hardly kept pace with the increase of population, and is rapidly falling short of meeting the great increase in the demand for such teachers.

But though more Normal Schools are required, a sufficient number for the training of all our teachers could not be provided, except by a large permanent annual expenditure; nor would this answer the purpose, for a large proportion of the teachers could not afford the time and expense required to graduate, and, moreover, teachers need different degrees and kinds of training for different grades and descriptions of schools. Some other system must be devised. Two plans have been suggested. One contemplates the establishment of several Normal Schools, with a course of three or six months, devoted to a strictly professional course of instruction in the art of organizing, governing and instructing schools. From four to six hundred teachers could be trained vearly in each of these, at an expense not much greater than is now required at the Normal Schools, and they would be much better fitted for their work than are the present large number of teachers who lack special training. This plan has been fully elaborated by one of the best educators in our country, and his recommendation is sufficient to entitle it to the most careful consideration. There are some decided advantages in introducing normal instruction into the High Schools and Academies. These

schools are in successful operation in locations where the pupils live and the teachers are needed. No additional expense would be required for the construction and maintenance of the schools, and a department for this branch of education can be as well established there as in separate schools.

With the view of furnishing teachers of their own schools, several of the cities and large towns have made provision for giving normal instruction to such pupils of the High Schools as desire to teach, either by forming classes for the purpose in the schools themselves, or by establishing Training Schools, auxiliary to the High Schools.

It is believed that many of the Academies would employ competent instructors, and establish such a course of instruction, to be prescribed by the Board of Education, provided reasonable encouragement should be proffered by the Commonwealth.

The experiment might be tried in two or three leading Academies; and, if found to work satisfactorily, it could then be gradually extended.

This system is in operation in New York, and between one and two thousand are annually instructed, free of charge, for four months, in the teachers' classes in Academies selected for that purpose by the Regents. "The results of the instruction given have been apparent in the improved character of the teachers of the Common Schools."

In 1870, this Board submitted to the legislature "An Act relating to free instruction in drawing," which was approved in May of that year. By this Act, drawing was made one of the branches of learning to be taught in the Public Schools; and every city and town having over 10,000 inhabitants was required to provide free instruction in drawing, to persons over fifteen years of age, either in day or evening schools. It is now admitted, by all who have examined the subject, that every one who can learn to write can learn to draw, and that drawing is simpler in its elements and can be more easily acquired than writing. Special instructors are no more required for drawing than for writing or arithmetic. Teachers must learn and teach elementary drawing as they learn and teach other branches. It has been found abroad that teachers can acquire a sufficient knowledge of drawing without any great sacrifice of time or patience.

In order to obtain the advantages of the best methods of instruc-

tion, Mr. Walter Smith, the art master in charge of the school at Leeds, England, has been employed by the Board as a professional adviser and lecturer in the matter of art education, and by the city of Boston as head master in the Normal Art School, his time being divided between the State and City in just proportion. He commenced his duties in July last, and has already delivered lectures in several of our large cities, and given practical demonstrations and addresses on the subject at the Teachers' Institutes. A collection of models, casts, apparatus and examples, similar to those used in the English Schools of Art, has been procured, and will be on exhibition in the schools when desired.

The Board are aware that the present provision is very inadequate, and hope soon to procure the services of a suitable person or persons, with assistants, to visit the different cities and towns and give such aid and advice as may be necessary for the successful introduction of this art into all our schools.

A very valuable tract, containing several papers on drawing, was printed by the Board in December last, and a circular sent in November to the School Committees of the towns throughout the State, calling attention to the law, and stating what provision had been made for giving lectures and furnishing the use of the models. Instruction in drawing has been given in many schools with very encouraging results, and especially in the Evening Schools in architecture, machine and ornamental drawing.

#### THE SCHOOL FUND.

The School Fund charged at cost amounts to \$2,233,850; its present market value exceeds the cost by nearly \$500,000. The aggregate income for the last five years was \$842,803.74,—the yearly average being \$168,560.75. The income for 1871 was \$177,496.46, one half of which, or \$88,748.23, is disbursed "for the support of Public Schools without a specific appropriation." Of this sum \$100 is paid to each city and town, and the balance apportioned among the several cities and towns in proportion to the number of children in each between the ages of five and fifteen. This sum of \$100 to each town takes \$34,000, leaving \$54,748.23 to be apportioned among 278,249 children, or 19 cents to each child. The whole sum, if thus divided, would give to each child \$2 cents. The sum raised for educational purposes by taxation averages \$11.78 per child, and the

mere statement of the case is sufficient to show how inadequate this 19 or 32 cents is to afford any substantial relief to the towns, or benefit to the schools.

The remaining half of the income is appropriated to other educational purposes, and the surplus of income, if any, is added to the principal fund. The aggregate amount of these expenditures for the last five years was \$381,401. The appropriations have increased year by year, and last year amounted to \$92,056,\* and will not be much less than that in the future, unless the State changes its policy, and shows a less liberal spirit towards its educational interests.

We start, then, with the fact, that the income of the fund applicable to educational purposes is absorbed by the present wants of the school system, to which must be added interest and insurance on the new Normal School at Worcester, . \$3,700 00 Annual expenses of the school, . . . . . . . . . . . . 12,000 00

**\$15,700 00** 

What arrangement shall be made for meeting the annual deficiency? Every town is now required by law to keep schools of a prescribed character for a fixed period every year, and to raise by taxation the amount required for their support. This tax is really assessed for the benefit of the entire Commonwealth, and not especially for the individual town, and properly it should be equally assessed upon all the property; but there is great inequality in the assessment, owing to the unequal distribution of property in the various towns and sections of the State. In the year 1869 and 1870, the percentage of taxation varied from .088 to .714 of one per cent., or in different counties from .231 to .421 of one per cent.,—the average was .321 of one per cent. The lowest percentage is generally in the large and wealthy cities .the highest, in the small and poor farming towns. These towns feel the burden much more, and are tempted to keep down the school expenses, and raise the smallest sum possible, by paying their teachers small salaries, and providing poor and ill-furnished Poor schools are the inevitable result of this school-houses. system.

<sup>\*</sup> These appropriations were not wholly expended, or there would have been a deficit.

The School Fund was originally established in 1834, in part to correct this evil, and it was then provided that a just and equal distribution of the fund should be made to Boston, and the several towns and districts throughout the Commonwealth. Since that time, the length of time the schools are required to be maintained has been greatly extended, and their character improved. Within the last ten years, the amount raised by taxation has been nearly doubled, having increased from \$6.42 per child in 1860, to \$11.78 in 1870-71. The income of the fund, therefore, which was then distributed, bore a much larger ratio to the whole tax than at present.

The Board believes that the principle suggested is a just one, and that some appreciable portion of the burden of taxation for schools should be assessed equally upon the whole property of the Commonwealth. It is therefore recommended that a State tax of one-half of one mill be levied with the general State tax, and the proceeds be held by the treasurer for Commissioners of the School Fund, and the net proceeds of said tax, together with the income of the School Fund, be expended, three-fourths for the support of Public Schools, without a specific appropriation, as the moiety is now expended, and the remaining one-fourth for other educational purposes. This tax will yield about \$500,000 on the valuation of 1865, and about \$700,000 on a new valuation, and will give about \$650,000 a year to be distributed among the towns, and \$217,000 a year for other educational purposes.

A special report will be submitted in response to a Resolve of the last General Court, to provide "for the revision of the laws relating to attendance upon the Public Schools."

#### TECHNICAL EDUCATION.

A Resolve was passed by the last General Court "relating to Technical Instruction in Schools," by which the Board of Education were directed to report "a feasible plan for giving in the Common Schools of the cities and larger towns of this Commonwealth additional instruction, especially adapted to young persons who are acquiring practical skill in mechanic or technical arts, or are preparing for such pursuits."

Technical education is instruction in the peculiar knowledge or special skill required in any business or occupation — the training

which will render the talents of the citizen most useful to the State in that particular craft, trade or profession in which he or she is engaged, whether as mechanic, farmer, sailor, engineer, teacher, merchant, architect, minister, doctor or lawyer. As the education of the Common Schools fits the youth for the performance of his general duties as a citizen, so the Technical School prepares him for the special duties of his trade or pro-Divinity, Law and Medical Schools, for special or technical instruction in those professions, have long been in successful More recently, the State has established Normal Schools for training teachers, and an Agricultural College to educate farmers. It has also generously endowed the Institute of Technology in Boston, and the Museum of Zoölogy in Cambridge; but though these last two institutions, and the Scientific School in the latter place, afford great advantages to those who intend following the higher walks of industrial pursuits, they do not give the practical instruction required to fit the mechanic for his daily work. They bear the same relation to schools for the technical education of mechanics that the college does to the High School: each is indispensable in its place, but neither fulfils the functions of the other.

The only school in this State where a technical education in mechanics combined with practice can be obtained, is the "Worcester County Free Institute of Industrial Science" in Worcester. It was incorporated in 1865, and is a model institution, which has no superior in this country. The corps of instructors embraces professors of chemistry, mechanics and physics, drawing, mathematics, civil engineering, French and German. There are eightynine pupils in the school, mostly from Worcester County. There are also twenty free State scholarships for the benefit of pupils from other counties than Worcester, to be selected by the Board of Education.

The value and importance of schools of this character is not understood or appreciated in this country. If our citizens engaged in mechanical pursuits, and they comprise the body of the people, had realized that the State could have provided schools as useful and necessary for the education of mechanics as the Divinity and Law Schools are for the training of ministers and lawyers, they would have demanded and obtained them before this. It should be unnecessary to enlarge upon the vital impor-

tance of schools of this character. One of our leading citizens who has devoted much time and thought to this subject says that "provision for the prompt, speedy and ample or the better education for the manufacturing or mechanic operatives of Massachusetts is not only an investment promising a vast pecuniary return, but is to-day a necessity of self-preservation for the State." Four-fifths of all the industry of the State is dependent upon occupations for which the training of these schools would be a preparation; over 250,000 of our inhabitants are engaged in mechanical pursuits, yet nothing has been done for their special instruction until within a few years.

In this branch of education, as in many others, Germany, Switzerland, Austria and Belgium have taken the lead, leaving England and America far behind. In the great exhibition in London, in 1851, English workmen excelled in nine-tenths of the one hundred departments; but in the Paris Exposition of 1867, they excelled in only one-tenth. During those sixteen years artists, mechanics, engineers and chemists trained in Technical Schools, had entered the workshops of Europe, and by means of their skill and knowledge had transferred to the Continent the supremacy England had so long enjoyed. At that very time, a French company was building locomotives for an English railway. and iron girders for a building in Glasgow were being constructed in Belgium. England, alarmed at the report of her jurors at the Exposition, at once established Technical Schools in many of her largest cities and has determined that hereafter her citizens shall at least be as well educated as those of Europe, and shall have a technical training "which will make the new generation of Englishmen excel the new generation of foreigners in this coming rivalry of race and nation."

The question for Massachusetts to consider is, what position she will take in this strife for the world's prizes. We cannot expect long to enjoy the high protective tariffs that now keep out the cheap products of the skilled labor of Switzerland and Prussia, nor should we desire it. The market for our industries ought not to be confined to the State nor even to the United States. The broader development which our free institutions give to the individual man, enables him to accomplish a greater amount of work; and if we only furnish a better technical education than is given abroad, we can contend on an equal footing and compete

successfully for the markets of the world. Without such education, the American artisan must gradually descend in the scale of industry and content himself with a menial station in life, for there is no middle ground. Drawing is the language of mechanics, and ability to use the pencil freely lies at the foundation of success in many mechanical pursuits. The Board have not overlooked its importance, and two years since they submitted to the legislature a bill "relating to free instruction in drawing," which became a law. The good results that have already followed are admitted by the community and have been referred to in another portion of this Report.

While the Board do not think it feasible or advisable to give technical instruction in the Common Schools, other than drawing, and perhaps needle-work to girls, inasmuch as none of the branches now taught in those schools can be dispensed with, for the graduates of the Common Schools are the only ones properly fitted to enter the Technical School, they would suggest that the State authorize all cities and towns having a population of five thousand and over to establish free technical schools for instruction in such branches of knowledge common to the leading industries of the entire State as may from time to time be prescribed by the Board of Education.

WILLIAM CLAFLIN.
JOSEPH TUCKER.
CONSTANTINE C. ESTY.
SAMUEL T. SEELYE.
JOHN D. PHILBRICK.
DAVID H. MASON.
HENRY CHAPIN.
ALONZO A. MINER.
GARDINER G. HUBBARD.
WILLIAM RICE.

## REPORTS OF VISITORS OF THE NORMAL SCHOOLS.

### FRAMINGHAM.

The school gives evidence of permanent prosperity and increasing usefulness.

The statistics for the year are as follows:—

Gradu	ates f	or v	vinter	term	, 1870–7	1, .	•	•	•		8
	f	or s	umme	r ter	m, 1871,	•		•	•		19
Pupils	who	left	witho	out gr	aduating	ζ, .	•	•			21
-	who	hav	e died	l, .		•		•	•		1
Advan	ced c	lass	, wint	er tei	m, 1871	<b>-72</b> ,	•		•		7
Senior		"	•	"	1871	<b>-72</b> ,	•	•	•	•	20
Second	đ	66		"	1871	<b>-72</b> ,	•				28
Third		"		•6	1871	<b>-72</b> ,	•	•	•		22
Fourth	ı	"		"	1871	<b>-72</b> ,	•	•	•	•	28
T	otal,		٠.				•	•	•	-	154
	•				ry, 1871	l, .	•	•	•		20
			8	ep <b>t</b> em	ber, 187	1, .	•	•	•	•	26
Avera	ge ag	e of	those	adm	itted in I	ebrus	ary, .		. 1	7.7	yrs.
					itted in S			•	. 1	17.8	yrs.

Six States are represented:—New Hampshire, 8; Vermont, 2; Massachusetts, 185; New York, 6; Rhode Island, 2; New Jersey, 1. Six counties of Massachusetts are represented:—Worcester, 63; Middlesex, 42; Norfolk, 11; Suffolk, 5; Bristol, 2; Franklin, 1.

The towns represented are:—Framingham, 14; Milford, Natick, Southborough and Westborough, 7 each; Northborough, 5; Boston and Acton, 4 each; Brookfield, Grafton, Needham, Newton, Winchendon and Worcester, 8 each; Blackstone, Concord, Fitchburg, Franklin, Holliston, Lancaster, Marlborough, Medfield, Mendon, Millbury, Stoneham and Wayland, 2 each; Auburn, Barre,

Berlin, Charlestown, Chelsea, Dana, Douglas, Holden, Leominster, Medway, Milton, New Bedford, New Braintree, Orange, Paxton, Pepperell, Sherborn, Somerville, Sterling, Sturbridge, Taunton, Templeton, Upton, Uxbridge, Webster, West Roxbury and Wrentham 1 each.

The occupations of the parents are:—Farmers, 5; carpenters, 10; manufacturers, 6; shoemakers, 9; clergymen, lawyers and mechanics, 4 each; machinists, blacksmiths physicians and laborers, 3 each; traders, 12; cabinet-makers, 8; overseers, sailors, miners, cashiers, painters, book-keepers and agents, 2 each; coopers, tanners, gardeners, musicians, butchers, bakers, printers, artists, leather-workers, sea captains, teamsters, mill operators, millers, architects, naval officers, carriage-makers, sail-makers, copper-smiths and harness-makers, 1 each.

At the close of the winter terms, Miss Ellen A. Chandler and Miss Abby P. Kelly resigned their places as teachers, and Miss Sabrina Jennings and Miss Maria S. Eaton were appointed in their respective places. Miss Ellen Hyde, senior assistant, being unable, by reason of ill health, to take her full number of classes, resigned at the close of the summer term, and is now in Germany pursuing studies, as far as her health will allow. No appointment has been made in her place.

At the opening of the fall term, a new advance class was formed. For this class, as well as for others in the school who wished to study French, Madame J. M. Destre has been employed during the term.

A course of lectures on natural history and geology was given during the spring term by Professor Sanborn Tenney, of Williams College. Other lectures have been delivered during the year by Hon. Emory Washburn, Professor W. P. Atkinson and A. J. Phipps, Esq., Agent of the Board.

There is urgent necessity for new and ample apparatus for illustrating physiology, chemistry and natural philosophy. The present apparatus is old, poor and meagre, and can be used with little pleasure or profit.

A room in third story of the new part of the school building, designed for instruction in drawing, is unfinished. The wants of this department of study require that this room should be completed at once, as the present use of the hall for drawing exercises

is attended with inconvenience and interruptions to other exercises.

It is also very desirable that the library should be removed from its present room, which is needed for other purposes, to an upper room fitted for it, but which must first be furnished with shelves, tables, &c.

All the expectations in regard to the success and usefulness of the boarding-house have been fully met. During the present term it has been crowded, and there have been more applicants than could be accommodated. A much larger building would readily be filled, and the number of pupils in the school increased accordingly. The price of board has been \$3.50 per week.

On account of the inadequacy of the supply of water in the wells and cistern during much of the time, great discomfort has been occasioned, and large expense incurred by the State, in being compelled to have water brought from a distance. This expensive trouble will continue until some new mode of supply shall have been adopted.

The school grounds need to be graded, and furnished with shade-trees. They are now in a rough condition, and present an unsightly appearance, and one not creditable to a State School. We hope an early appropriation will be made for their improvement in the coming spring.

We regret the retirement from the Board of the Hon. Emory Washburn and D. H. Mason, who, for some ten years as Visitors of this school, gave to it their constant and pleasant supervision. To teachers and pupils they were not only welcome official Visitors, but personal friends. The important change made by the Board several years ago, by which the school was placed under the charge of a woman, the present accomplished and successful Principal, was from the first sanctioned by them, and to it they gave their enthusiastic support, and retained their connection with the school until the change had been fully tested, and its success assured.

HENRY CHAPIN, C. C. ESTY,

Visitors.

JANUARY, 1872.

#### WESTFIELD.

The Visitors of the Westfield Normal School are happy to report that this School has been eminently prosperous during the past year. The number seeking its advantages, and the demand for its graduates, have been greater than ever before. We cannot speak too highly in commendation of the zeal and devotion and ability of the accomplished Principal, to whom the school is so largely indebted for its success.

There has been but a single change in the regular corps of teachers during the year. Mr. J. C. Greenough has been "called up higher," having received and accepted the appointment of Principal of the State Normal School of Rhode Island. Mr. Greenough has been connected with this school, as one of its teachers, for fifteen years. During that long period he was faithful in his work and commanded the respect of the pupils of the school and of the community in which he lived.

His departure was a loss to the school, but we trust it was a gain to the State in which he is now laboring with great earnestness. We cordially wish him great prosperity.

Miss Ella J. Mole, a recent graduate of the school, was appointed Assistant, August 6. While a member of the school she distinguished herself as a scholar, and since her appointment as teacher she has given evidence of possessing, to an eminent degree, the teaching power that insures success.

On the whole, the classes of the school were never more satisfactorily taught than now.

The advanced classes are pursuing the advanced course of study with great pleasure and profit. Three of the advanced pupils have entered upon a course of special training for "Training Schools." There is now a great demand for teachers of these schools. We shall soon be able to do something towards supplying this demand.

The chemical and philosophical apparatus, and the specimens in our cabinets, are so constantly used that both apparatus and

cabinets need replenishing. A sum of money should be appropriated to this purpose.

The Reference Library is also in need of new books.

The same reasons that led to an earnest appeal, last year, for a boarding-house for the Normal pupils, lead us to make a still more earnest appeal the present year. Such a house seems to be essential to the continued prosperity of the school. It is becoming more and more difficult to secure homes of any kind for the pupils. It is now impossible to provide good homes for them all. Hence a boarding-house is needed, not only to accommodate the pupils, but also to keep them under those strong and healthful influences which are thrown around them during the sessions of the school.

The Secretary of the Board has given several valuable lectures on civil polity to the senior class. The Agent, Mr. Phipps, has also given two instructive lectures.

Mr. Dickinson, in his report to the Visitors, says:—

"Our thanks are due to many friends for contributions to our cabinets. We are now greatly in need of these contributions, and we promise to those who will aid us a most hearty appreciation of their favors.

"Our pupils have been happy in their work, and are cheered in it by the prospect of future usefulness and success.

"Our teachers have no superiors in ability and faithfulness, and we commend both pupils and teachers to the State to which they have consecrated their services."

The statistics of the school are as follows:-

The whole r	ıumbe	r in	atten	dance	e duri	ing th	e pas	t yea	ar is—	
Ladies,	•			•	•	•	•	•	117	
Gentleme	n,		•	•	•	•	•	•	17	
Tota	l,	•		•		•				184

Of this number Hampden County furnished 48; Hampshire, 22; Franklin, 21; Worcester, 18; Berkshire, 12; Suffolk, 1; Essex, 1; Connecticut, 5; Rhode Island, 2; New Hampshire, 2; Vermont, 2; New York, 2; New Jersey, 1; Wisconsin, 1; Kansas, 1. Total, 134.

Graduates.—Fal	l and	l win	ter te	rm, 1	870-7	1,			
Ladies, .				•		•		13	
Gentleman,									
Total,									
	•	•	•	•	•	•	•		
Spring and summ	ner t	erm,	1871,	,					
Ladies, .	•	•	•	•	•			28	
Gentleman,	•		•					1	
Total,									24
,	•	•	•	-	•	•			
Whole number o	f gra	duate	98,—						
Ladies, .	•	•	•	•	•	•		86	
Gentlemen,	•	•	•	•		•	•	2	
Gentlemen, Total,	•	•	•	•	•	•	•		88
•									
Number in enter								1870-	-71,
Ladies, .			•	•	•	•	•	26	
Gentlemen,					•			8	
Total,	•	•		•	•	•			29
Spring and sum				,					
Ladies, .	•	•	•			•	•	29	
Gentlemen,							•	8	
Total,	•	•	•	•	•	•	•		<b>82</b>
Whole number e			_	•	•				
Ladies, .	•	•	•	•	•	•	•	55	
Gentlemen,	•	•	•	•	•	•	•	6	
Total,	•	•	•	•		•	•		61
Average age of e				-					
Ladies, .	•	•	•	•	•				on <b>ths.</b>
Gentlemen, General aver	•	•	•	•	•	19		-	"
General aver	age,	•	•	•	•	18	"	6	"

Occupation of parents: farmers, 26; manufacturers, 8; clergymen, 7; mechanics, 14; merchants, 8; miller, 1; printer, 1; painter, 1. Total, 61.

1870–71,— Ladies, .	_		_		_	_		40	
Gentlemen,			•	•	•				
Total,	•	•	•	•	•	•			44
Spring and sum	mer t	erm,	1871,						
Ladies, .	•	•	•	•	•	•	•	49	
Gentlemen,	•	•		•	•	•	•	5	
Total,	•	•	•	•	•	•	• •		54
Whole number	who l	have 1	eceiv	ed Sta	ate ai	d,			
Ladies, .		•	•	•	•		•	89	
Gentlemen,	•		•	•		•		9	
Total,									98

# Respectfully submitted,

8. T. SEELYE, WM. RICE, Visitors.

## BRIDGEWATER.

The statistics of this school for the year 1871 are as follows:—
Number of pupils admitted during the year:—Gentlemen, 16; ladies, 60; total, 76.

Average age on admission:—Gentlemen, 20.6 years; ladies, 19.75 years; general average, 19.9 years.

Number who had previously taught:—Gentlemen, 6; ladies, 28; total, 34.

Number in attendance, spring term:—Gentlemen, 38; ladies, 96; total, 134. Fall term:—Gentlemen, 32; ladies, 107; total, 189.

Whole number in attendance during the year:—Gentlemen, 42; ladies, 137; total, 179.

Number of graduates for the year:—Gentlemen, 13; ladies, 24; total, 37.

Number who have received State aid:—Gentlemen, 19; ladies, 83; total, 52.

Number admitted since the beginning of the school, graduated " " 1,915 . 1,117

Of the 76 pupils admitted in 1871, Bridgewater, Fairhaven, West Bridgewater, sent 5 each; Abington, Middleborough, North Bridgewater, 4 each; Westminster, 3; Boston, East Bridgewater, Kingston, Petersham, Royalston, Swansea, 2 each; Chelsea, Dighton, Hanover, Haverhill, Hingham, Marblehead, Medway, Blackstone, Natick, Newton, Northfield, Plymeuth, Plympton, Provincetown, Rockport, Scituate, South Scituate, Stoughton, Tyngsborough, Westport, Weymouth, 1 each; Jaffrey, N.H., 2; South Acton, Northampton, Pelham, Peterborough, Tuftonborough, 1 each; Rockland, Me., 3; Brandon, Vt., 1; Lower Merion, Penn., 1.

The occupations of their fathers have been given as follows:—Farmers, 25; mechanics, 27; physicians, 5; clergymen, 8; sea captains, 2; seamen, 2; clerk, dentist, druggist, trader, miller, fur dealer, paper-maker, stone-mason, stable-keeper, tanner, 1 each; unknown, 2.

Of the 179 pupils in attendance during the year, Plymouth County sent 56; Bristol, 23; Norfolk, 22; Middlesex, 17; Worcester, 15; Barnstable, 10; Suffolk, 7; Essex, 4; Franklin, 3; Dukes, 1. The State of New Hampshire sent 13; Maine, 3; Vermont, 2; Pennsylvania, 1; Texas, 1, and Nova Scotia, 1.

'Six of the United States, ten counties, and sixty-seven towns of this State, have been represented by the pupils during the year.

The school has had interesting and valuable lectures during the year from Prof. Sanborn Tenney, of Williams College; Rev. Wm. Barrows, D.D., of Reading; Prof. W. P. Atkinson, of Boston; G. G. Hubbard, Esq., of the Board of Visitors; Hon. Joseph White, the Secretary, and Abner J. Phipps. Esq., the Agent, of the Board of Education.

The advanced course, for which provision was made by the Board two years ago, is in full operation. It has been so arranged that pupils who, on entering the school, have in view the completion of this higher course, may each term take a part of its studies in connection with a part of the branches in the regular course, and in this way, at the end of four years, be prepared to graduate from both courses simultaneously. This arrangement gives the students the benefit of the study of the languages in connection with the study of the other branches of the course. Graduates from the regular course may go on with the advanced course, devoting their time exclusively to it. There are now fourteen graduates and under-graduates together pursuing the studies of the advanced course.

This school has been fortunate in its teachers. During the last four or five years there have been very few changes in the corps of instructors, who have worked together in perfect harmony, with great fidelity and with constantly increasing ability. The combination of permanency and excellence on the part of the teaching staff has naturally resulted in a constant advance in the quality and quantity of the work done by the school. Mr. Kirmayer, who was appointed a little more than a year ago, proves to be a valuable acquisition to the school, bringing to his work a large share of patience, zeal, German fulness of learning and German thoroughness of method. At the close of the spring term, Mr. Winship resigned his position to engage in business, and Miss Richards resigned early in the fall term, to take charge of a home. They were highly valued by

us; they merit our warmest thanks for their earnest devotion to the interests of the school, and they carry with them, into their new spheres of duty, our best wishes for their continued prosperity.

The vacancies thus occasioned were filled by the appointment of Mr. Barrett B. Russell, Principal of a large Grammar School in Dedham, and Miss Clara A. Armes, First Assistant in a Grammar School in Newton. They are members of the class graduated from this school in January, 1869. Both were able and successful teachers in the positions from which they were called, and have fully sustained that reputation in their present work.

The instructors at the present time are:—Albert G. Boyden, A.M., Principal; George H. Martin, Francis H. Kirmayer, Barrett B. Russell, Eliza B. Woodward, Mary H. Leonard, Clara A. Armes, Mary A. Currier, all of whom are thoroughly devoted to their work, Principal and assistants coöperating cordially with each other in promoting the best interests of the institution.

The salaries of Messrs. Kirmayer and Russell are not so high as they should be, and probably another female teacher will be needed next term.

The most important event in the history of the school during the past year, was the enlargement and improvement of the school building. The Committee of the Board appointed to take charge of this business, employed Mr. Boyden as their agent, to superintend the work in all its departments. He has performed this service with fidelity and good judgment, and to the entire satisfaction of the committee. The report of Mr. Boyden, as superintendent of the work for the enlargement of the school-house is here inserted.

BRIDGEWATER, December 29th, 1871.

To the Committee of the Board of Education for the Enlargement of the Bridgewater Normal School Building, Messis. John D. Philbrick, Joseph White A. A. Miner.

Dear Sirs:—I herewith submit to you my report of the work entrusted to me in the superintendence of the enlargement of the Bridgewater Normal School Building.

The resolve of the Legislature authorizing the expenditure of a sum not exceeding \$15,000, to be paid out of the moiety of the income of the school fund applicable to educational purposes, for the enlargement and reconstruction of this building, was approved May 12, 1871.

The plans for the enlargement were carefully matured after visiting

and examining several other school buildings recently erected and much study of the building to be altered, Solomon K. Eaton, Esq., of Mattapoisett was employed as architect to make the working plans and elevations. After careful estimates of the cost of the work had been obtained from different parties the contract for carpenter and mason work and painting was given to Mr. Eaton, the architect. It was provided in the contract that the new cases for the cabinet therein specified should be built at cost and all extra work should be done at the same rate.

The building has been enlarged by adding a story sixteen feet in height, and greatly improved in external appearance by an observatory on the centre, a new roof with heavier projections and a new cornice and a band between the first and second stories with quoins upon the pilasters of the lower story.

The first story contains the ante-rooms for the students, four recitation rooms, a room for philosophical apparatus and a chemical laboratory. Upon the second floor are five commodious recitation rooms, with alcoves and cases for the library and cabinets. The third story contains the main school-room, a spacious hall, well ventilated, light and very cheerful, the senior recitation room and the Principal's room. It is now one of the most pleasant and convenient school buildings in the State.

The work on the building was commenced July 12, immediately on the close of the spring term, and was so far completed at the end of the summer vacation that the school could go on with its usual work. Mr. Eaton deserves much credit for the energy and fidelity with which he fulfilled his contract.

These changes in the building created the necessity for new heating and ventilating apparatus. The two McGregor furnaces which warmed the building before the enlargement have been in use for ten years, are nearly worn out, and will last only through the present winter. Estimates were obtained for heating and ventilating the building by steam after the plan which has proved so admirably effective in the boarding hall. The appropriation was found sufficient to procure only the ventiducts necessary for this plan. These were put into the construction of the building, and two portable furnaces were added to the heating apparatus for use during the present winter, which can be readily sold another year, leaving the steam-heating apparatus to be provided for by another appropriation.

The appropriation of \$15,000 has been expended as follows by the direction of the committee:—

S. K. Eaton, architect,								\$240	00
S. K. Eaton, contractor,			•			•		13,833	
S. K. Eaton, for extra w	ork,	•		•	•	•		320	81
J. G. Sparrow, for extra						•		90	96
J. H. Fairbanks, for furn					or,	•	•	366	28
H. G. Goodrich, for make	ing bl	lackb	oard,	•	•	•	•	85	00
Peter C. Jones and Son,						•	•	24	15
A. G. Boyden, paid for s	tone '	work	on fe	ound	ation	ıs, .	•	89	80
							-		

\$15,000 00

These bills have all been paid and the receipts returned to the treasurer of the Board, with the exception of those now accompanying this report.

The contractor has delivered the building free from all claims upon it, as per terms of the contract. All which is respectfully submitted.

A. G. BOYDEN, Superintendent.

In accordance with the facts presented in the foregoing report, the Visitors recommend that the legislature be requested to make the necessary appropriation for furnishing the school building with steam-heating apparatus.

A second year's experience in the boarding-hall has more than confirmed the estimate of its utility given in our last report, and more urgently presses upon us the necessity for its enlargement. It is no longer an experiment; its success is beyond question. It is now indispensable to the maintenance of the school, and a further increase in the number of students is not to be expected until additional boarding accommodations are provided.

There is now as much difficulty in obtaining the requisite boarding places outside the hall, as there was to get suitable boarding places before the hall was built. There is the additional difficulty arising from the difference between the price of board in the hall and in private families, the latter being \$1.25 per week more than the former. Those who are excluded from the hall are more or less dissatisfied. Already numbers of pupils have been prevented from entering the school on account of the high prices of board in private families, and the difficulty of obtaining suitable board at any price. And some pupils now in attendance will be compelled to leave unless some relief in respect to board is provided.

In view of these facts the Visitors would renew, with increased earnestness, the request made last year for an enlargement of the boarding-hall. If this improvement is made at the same time with the furnishing of the new heating apparatus for the school-house, a considerable saving might be made by combining the apparatus for both buildings.

The Visitors expect to be able to lay before the Board, at its next meeting, estimates of the expense of enlarging the boarding-hall, and heating the school building.

We would again remind the Board of the desirableness of providing a new and suitable fence for the school grounds.

In conclusion, the Visitors take great pleasure in reporting the school, with exception of the needs above referred to, in a highly satisfactory condition, and as a simple act of justice we desire to say with emphasis, that the prosperity of the school is due in a large measure to the untiring labors and the judicious management of the capable and worthy Principal.

JOHN D. PHILBRICK, GARDINER G. HUBBARD, Visitors.

#### SALEM.

The Salem Normal School has enjoyed a year of great prosperity. Its excellent Principal, D. B. Hagar, Ph. D., compelled to relax his toil and withdraw from duty during a portion of the preceding year, has been at his post continually during the last year, as have also his efficient assistants, with the exception of Miss Mary E. Webb. In consequence of ill health, Miss Webb, for a long time one of the most successful teachers in the school, has been obliged to suspend her labors, and to seek a restoration to health in a foreign land. Her duties have, in part, been most acceptably performed by Miss E. Adelaide Towle, a member of the advanced class.

The statistics for the year 1871, were as follows:—

1. The whole number of pupils since the opening of the school, September 13, 1854, is 1,453.

The number in attendance during the first term of the year, 152; during the second term, 158; number of different pupils during the year, 218.

Number admitted February 14, 1871, 25; average age, 18.83 years. Number admitted August 29, 1871, 59; average age, 18.86 years.

2. Of the 84 pupils admitted during the year, Salem sent 11; Lowell, 8; Lynn and Peabody, 5 each; Chelsea and Swampscott, 4 each; Manchester, Somerville and Wakefield, 3 each; Haverhill, Lynnfield Centre, Malden, Newburyport and Andover, 2 each; Danvers, Danvers Centre, Dunstable, East Boston, East Saugus, Franklin, Gloucester, Ipswich, Lynnfield, Marblehead, Marshfield, Medford, Medway, Methuen, North Reading, Sterling and Topsfield, 1 each. The State of New Hampshire sent 6; New York, 2; Maine, Pennsylvania and Vermont, 1 each.

Of the 213 pupils present during the year, Essex County sent 125; Middlesex, 40; Suffolk, 9; Norfolk, 5; Worcester, 5; Plymouth, 3; Bristol, 2; Barnstable, 1; Nantucket, 1. The State of Maine, 3; New Hampshire, 13; Vermont, 1; New York, 2; New Jersey, 1; Pennsylvania, 1; Iowa, 1; Louisiana, 1.

8. The fathers of the pupils admitted during the year, are, by occupation, as follows: Farmers, 14; carpenters, 12; overseers, painters and shoe manufacturers, 3 each; blacksmiths, brokers,

clergymen, engineers, lawyers, livery-stable keepers, lumber dealers, mariners, merchant tailors and tanners, 2 each; butcher, cabinet-maker, cashier in bank, clerk, colonel, commission-merchant, cooper, fresco-painter, furniture-dealer, gardener, grocer, insurance agent, leather-dealer, maker of patterns for iron-work, merchant, proprietor of boarding-house, provision dealer, real estate agent, register of deeds, restaurant keeper, rubber manufacturer, ship carpenter, shoe-cutter, shoe-dealer, shoe-stitcher, stereoscope-manufacturer, stock-fitter, superintendent in cotton mills, and treasurer of a lead company, 1 each.

- 4. Of the class admitted in February, 5 had taught school; of the class admitted in August, 18 had taught; total, 18.
- 5. Number graduated January 17, 19; number graduated June 30, 40.

Whole number of graduates of the school (32 classes), 659.

6. Number of pupils present in the several classes during the first term of the year:—Advanced class, 4; class A (senior), 41; class B, 29; class C, 49; class D, 29.

Number present during the second term:—Advanced class, 12; class A, 19; class B, 47; class C, 21; class D, 59.

- 7. Thirty-one pupils have received State aid during the year, and thirty-seven have received aid from the income of the Bowditch Fund.
- 8. During the year, 525 volumes have been added to the general and text-book library,—425 by purchase, and 100 by gift.
- 9. The class that graduated in June very liberally contributed one hundred dollars to the fund for procuring a telescope for the school.

During the first half of the past year, the sessions of the school were held in the High School building, belonging to the city of Salem, where they were but indifferently accommodated; during the last half, in the remodelled building belonging to the Normal School. The enlargement of the Normal building, which was begun in July, 1870, was so far advanced in June, 1871, as to allow the school to reoccupy the house on the occasion of the public examination at the close of the summer term. In addition to the customary exercises, there were held at that time services appropriate to the rededication of the edifice to its important objects. There were present on the occasion, participating in the exercises, several members of the Board of Education, among whom were,

Hon. J. D. Philbrick, Hon. D. H. Mason, and Hon. A. J. Phipps, Agent of the Board, and distinguished citizens of Salem, among whom we mention Dr. George B. Loring and Professor Alpheus Crosby, former Principal of the school.

The building has been nearly doubled in capacity, and greatly improved in appearance and convenience. It now contains a spacious and beautiful assembly hall; numerous large, well-ventilated and cheerful recitation rooms; a fine library and reading-room; a philosophical room; a chemical room; and various other rooms, all of which are well adapted to meet the wants of the school, and to advance its prosperity.

Owing to the exhaustion of the appropriation made for the enlargement, three rooms in the third story have been left unfinished. As these rooms are needed for use (two of them being already occupied), and as the cost of finishing them will be only a few hundred dollars, it is hoped that an appropriation sufficient for the completion of the work will soon be made.

The Visitors of this school would most heartily congratulate the Commonwealth on having thus secured an admirable building, of fine appearance, symmetrical and convenient — scarcely less so than it would have been if constructed entirely anew from its foundations, and all at a very moderate cost. It must not be forgotten that very much of this success is to be attributed to the thorough study of the plan of the building, and constant watchfulness over its execution, by the vigilant Principal.

A. A. MINER,
Visitor.



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Massachusetts Board of Educazion in account with J. White, Treasurer.	OOLS.	Appropriation, . From unexpended balance, Todd Fund, .	
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				July,	Jan., .	

# INCOME OF THE TODD FUND FOR 1871.

1871. Oct. 11,	Paid J. D. Philbrick, for bill of models in drawing, &c., for Normal Schools and evening classes,	\$576 30	<b>1871.</b> Oct. 11,	Received from State Treasurer,	\$600 00
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	APPROPRIATION FOR SPECIAL AGENTS, 1871.	)R SPECIA	L AGENT	S, 1871.	
1871. t. 5, c. 18,	Paid Walter Smith, Director of Art Education, salary, W. Smith, salary, travelling expenses,	\$500 00 500 00 84 87	1871. Oct. 5, Dec. 18,	Drawn on Auditor's warrant, :	\$500 00 524 87
	<del>'</del>	\$1,024 87			\$1,024 87
	TEACHERS' INSTITUTES, 1871.	INSTITUT	ES, 1871.		
	Paid for Institute at Medway, for Institute at Pittsfleid,	\$320 00 350 00	1871. Oct. 3,	Received from the State Tressurer,	\$3,000 00
වී කු <b>ස</b> ූ වී	for Institute at Weilfleet, for Institute at West Newbury, for Institute at Marlborough, for Institute at Ayer,	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8			
	for Institute at Sandwich,	325 00 131 75 72 75 553 00			
	•	\$8,000 00			\$3,000 00
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# SALEM NORMAL SCHOOL BUILDING ENLARGEMENT.

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	•					2,736 77	•	•	•	•	•	•	•	•
						. 5,000 00	•	•	•	•	•	•	•	Paid Fuller & Walker,
78 96	•	•	Balance, .											
200			1871,			<b>400</b> 00	•	•	•	•	•	Š,	ıting,	on, pair
•	from Treasurer, Appropriation	Treasurer	fron		Š	00 009	•	•	•	•	•	٠	Ę.	rahitec
10,000 00	•	Treasurer,	Received from	'n	Jan.	2,500 00	•	•	•	•	•	•	•	
				1871.	2	2,300 00	•	•	•	•	•	•	•	:
					•	2,000 00	•	•	•	•	•	•	•	ason.
\$15,000 00		n Treasurer,	Received from Treasurer, .	Sept. 30,	Sept.	\$1,500 00	•	•	•	•	•	•	nters,	Paid Fuller & Walker, carpenters, .
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Appropriation, .	
1871.	
\$240 00 4,611 00 4,611 00 8,000 00 1,000 00 1,588 00	\$15,000 00
K. Eaton, Architect, K. Eaton, Architect and builder, K. Eaton, Architect and builder, K. Eaton, by A. G. B., Architect and builder, K. Eaton, Architect and builder, udry bills,	
Paid S. 1 S. 1 S. 1 S. 1 S. 1 S. 1	

				School Fund, 1,900 00	Received appropriation for overpayment, 507 73 Balance, 21 96	\$8,229 69	DITIONAL).	\$5,056 71 1,981 31	87,088 09
CHOOL BUILDING.	1870. Appropriation, .		AT FRAMINGHAM NORMAL SCHOOL.	1870. bb. 24, Received Loan from School Fund, ar. 18, Appropriation for Land,	<b>.</b> 8	•	ARDING-HOUSE (AL	pr. 22, Appropriation, .	
IAM NORMAL S	\$1,200 00 1,074 64 1,500 00	1,500 00 975 86 \$6,250 00	RAMINGHAM N		1,770 00 1e7. 310 00 Jan. 28 87 113 70	\$8,229 69	DING AND BO.	1987,000 00 Apr. 768 22 MAy. 1,000 00 37 8,946 37 858 83	\$7,088 08
ADDITION TO FRAMINGHAM NORMAL SCHOOL BUILDING	Paid to D. H. Mason,	Paid to J. J. Walworth, by Auditor of Accounts, to A. B. Esty, by Auditor of Accounts,	BOARDING-HOUSE AT F	Paid .	A. R. Esty, for sandry bills, A. R. Esty, for Cutlet & Co, D. H. Mason, for Balley, J. J. Shaw,	· ·	FRAMINGHAM NORMAL SCHOOL BUILDING AND BOARDING-HOUSE (ADDITIONAL).	Paid J. J. Walworth & Co. (Auditor's warrant), J. J. Walworth & Co. (Auditor's warrant), A. R. Esty, Architect (Auditor's warrant), Sundry of Sile (Auditor's warrant), State Treasier,	
	1676. Mar. 18, 16, 20,	1871. Mar. 9, Apr. 20,		1870. Feb. 25, Mar. 18,	Apr. May 28, Oct 13,			1871. Apr. June 8, Je. to Oct., Oct. 20,	•

\$704 00			\$704 00				
			389 00	•	•	Feb. 24, Paid for insurance on Framingham Boarding-house,	1876. Feb. 24,
\$704 00	3, Received from appropriation (Auditor's warrant),	1671. Apr. 28,	\$315 00	•	•	Nov. 20, Paid for insurance on Bridgewater Boarding-house,	1869. Nov. 20,
	FER AND FRAMINGHAM.	GEWA	AT BRII	SE	H01	INSURANCE ON BOARDING-HOUSES AT BRIDGEWATER AND FRAMINGHAM.	

CHAS. ENDICOTT, Auditor.

J. WHITE, Treasurer.

I find the foregoing account to be correct.

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# FIFTH ANNUAL REPORT

OF THE

CLARKE INSTITUTION FOR DEAF-MUTES.

1

# CLARKE INSTITUTION FOR DEAF-MUTES.

#### AT NORTHAMPTON.

# Members of the Corporation.

GARDINER G. HUBBARD, Boston, President.
Hon. WILLIAM CLAFLIN, Newton, Vice-President.
JAMES B. CONGDON, New Bedford, Vice-President.
WILLIAM ALLEN, Northampton, Clerk.
OSMYN BAKER, Northampton.
LEWIS J. DUDLEY, Northampton.
THOMAS TALBOT, Billerica.
JULIUS H. SEELYE, Amherst.
GEORGE WALKER, Springfield.
HORATIO G. KNIGHT, Easthampton.
F. B. SANBORN, Springfield.
J. HUNTINGTON LYMAN, Northampton.

### Trensmer.

# LAFAYETTE MALTBY, Northampton.

# Committees of the Corporation.

#### SCHOOL COMMITTEE.

LEWIS J. DUDLEY, Chairman. GARDINER G. HUBBARD. WILLIAM ALLEN. JULIUS H. SEELYE. F. B. SANBORN. THOMAS TALBOT.

#### FINANCE COMMITTEE.

FINAN H. G. KNIGHT, Chairman.

WILLIAM ALLEN.

#### GEORGE WALKER.

# BUILDING COMMITTEE. J. HUNTINGTON LYMAN, Chairman.

# Tenchers.

MISS HARRIET B. ROGERS,					Principal.
MISS HARRIET A. JONES, .					Assistant.
MISS CAROLINE A. YALE,					44
MISS ABBY A. LOCKE, .			•		4
MISS MARY E. POTWIN, .					u
Mps H I BARDWELL					и

# Steward.

#### HENRY J. BARDWELL.

**M**atron.

Assistant-Watron.

MISS M. MCINTOSH.

MISS EMMA KELLOGG.

Attendants.

MISS LIZZIE ELDER.

MISS EMMA J. VOSE.

farmer.

REUBEN ROBINSON.

# REPORT OF THE PRESIDENT.

To the Board of Education.

Gentlemen:—In order to make the Fifth Annual Report of the Clarke Institution cover its school year, which begins in September, and correspond in time with the official reports of other institutions, it will include the year ended September 30, 1871, and its financial statements will stop with that date. Notice will be taken, however, of the pupils present at the opening of the school year which began September 20, 1872. Our Report, therefore, will contain remarks upon a portion of the year covered by the fourth report.

The whole endowment of this school is derived from the gifts and bequests of John Clarke, Esq., which amounted, during his life-time, to \$50,000, and since his death to \$223,250, making an aggregate of \$273,250. It was the strong and often expressed desire of Mr. Clarke that the Corporation should build a permanent establishment for the reception of pupils in Northampton, and, in accordance with this desire, the present estate on Round Hill was purchased and improved. The total cost of land and buildings here, up to the 1st of October, 1871, has been \$91,749.-75; of furnishing, \$7,076 11; in all, \$98,825.86. The bequests of Mr. Clarke being held, according to the terms of the will, as a permanent fund, of which the income only is to be appropriated to the expenses of the establishment, it has been necessary to incur a temporary debt in paying for the buildings. This debt is now \$34,500. The fund, amounting now to \$223,250, is securely invested, and returns an average interest greater than that paid on the temporary debt. The real estate is in good repair, and estimated to be worth all it has cost. The number of acres is twelve, much of it under high cultivation, and planted with fruit-trees in good bearing. There are three halls, or school buildings, a stable, laundry, and gardener's cottage on the premises, all ample for their

present use, well built, and conveniently located. They were first occupied by our pupils in September, 1870, but the boys' house was not occupied till March, 1871, and the improvements in the grounds about it were not completed till the past summer. The school year of which we have to speak will therefore be the first year the new premises have been occupied.

The first term began September 28th, 1870, and closed February 14th, 1871; the second term began March 1st, and closed July 18th, 1871. The whole number of pupils during the year was 42; the average number was 40; the ordinary school expenses were \$12,561.79, for the two terms. A detailed account of the receipts and expenses will be found in another place. The number of pupils present at the opening of the second school year in the new buildings is 44; the number of teachers is five; of other employés, eleven. The Principal, Miss Rogers, is now in Europe, acquiring a knowledge of schools and methóds of instruction there; having left Northampton early in July, expecting to return during the second term of the present school year.

Miss Rogers reached Europe in the latter part of July, went directly to Germany, and, before visiting any schools, devoted some weeks to study and practice in the German language. On the first of October, in company with the president of the Clarke Institution, she went to Vienna, and entered the school of Mr. Lehfeldt (in our last report misprinted Siegbach), which I had visited in 1870, and in which I was greatly interested. It is a small family school, and therefore Mr. Lehfeldt is able to give his pupils more individual instruction than is common in larger institutions. Here Miss Rogers observes the method of instruction pursued day by day, especially with the youngest pupils. She also visits, on alternate days, the great school of Mr. Deutsch, supported by the Jews of Vienna,-one of the largest and best articulating schools in Europe, and in the same quarter of the city with Mr. Lehfeldt's. Thus she has the opportunity of observing how the younger pupils are instructed in large classes, as well as in the smaller ones of Mr. Lehfeldt's school. She makes daily notes of the progress of the pupils in both schools, and writes these out fully for the use of her assistant teachers in Northampton, who compare the results thus recorded with those obtained in our own school,—an excellent method of comparing the practical value of the systems of instruction adopted in different schools. Miss Rogers will

remain at Vienna a considerable portion of the winter, and then visit other European Schools where either articulation or the sign language, or both, are employed, and record the results there witnessed. From her observations and my own, made in the present and past year, it is found that a direct comparison between our own school and those in Germany taught by articulation is difficult, on account of the difference in the methods and character of the teachers in the two countries, and the habits of thought and study among the people. Our American teachers are generally younger, and more active and versatile in their modes of thought and instruction; while the German teachers are slower, more plodding and methodical, following fixed rules rather than adapting themselves to the capacity of different scholars and classes. Indeed, the chief differences between the various European schools of articulation appear due to the teachers rather than the nominal methods pursued. Where the instructors are young, zealous, and interested in their work, the schools are good, by whatever system they are taught; wherever, from any cause, the enthusiasm is less, the instruction is apt to be more mechanical, and of comparatively little value. In our next report we hope to present a more detailed comparison of our methods with those of Europe.

During the school year ending with the long vacation last July, the greatest number of pupils present at the Clarke Institution was 42, the average number 40, and the number of classes five. There were also five teachers, including the principal, and not reckoning the additional teacher, who, since Miss Rogers has been absent, performs the duties of fifth instructor. Concerning the progress made, information will be found in the report of the school committee, hereto annexed. It has not been thought advisable to give samples of the compositions of the pupils in this Report, since those presented in the fourth report were written during the same school year of which we now speak. In regard to the employment of a special teacher of articulation, which the Corporation have long contemplated, a few remarks may be here made. Since our last report was written, an opportunity has been allowed to test, in some degree, a new system of teaching articulation, introduced in this country by Prof. A. M. Bell, of Canada, formerly of England, and practically communicated to teachers and pupils by his son, Mr. A. G. Bell. This system,

based upon a thorough study of the vocal organs and of the elements of speech, has been practised with admirable results in the Boston School for Deaf Mutes, and has been partially acquired by several of our teachers who have taken lessons of Mr. Bell. It will be more perfectly taught to them by Mr. Bell, in March, 1872, and we shall then, if it is found to be successful, assign the use of it to a special teacher of articulation in the Clarke Institution: Mr. Philbrick, the superintendent of Public Schools in Boston, and others who have observed the new system as practised by Mr. Bell's pupils, are warm in its praise, and trial of it is to be made, we understand, in the American Asylum at Hartford.

The attention of the Corporation has been called, at various times, to the importance of some preliminary examination and classification of the deaf-mute children of Massachusetts, who apply for admission to the three deaf-mute schools now open to them,-namely, the Clarke Institution, the Boston Deaf Mute School, and the American Asylum at Hartford. In each of these schools a different method of instruction is pursued, and each of these methods is better adapted to the needs of certain classes of children than the other. Those who can be taught articulation with advantage, and who, belonging in Boston or its vicinity, can live at home and enjoy the benefits of parental care, should enter the Boston School; those who are unable, or whose parents are unwilling to take this course, should be received at the Clarke Institution, if they are suitable subjects for our instruction; while those (of whom there are many, no doubt,) who are not likely to profit by instruction in articulation, or who cannot be received at Boston or Northampton for want of room, should go to Hartford. The choice of a school is left by law with the Board of Education; and it seemed proper to the Corporation to propose to this Board, and to the authorities of the Hartford Asylum a joint committee to examine applicants and assign them to the several schools according to their fitness and the wish of their parents. This proposition has not yet been accepted by all the parties consulted, but we are still of opinion that joint action on the part of the three schools would be best.

Our hope that the United States census of 1870 would give a more complete enumeration of the deaf-mute inhabitants of Massachusetts, and of the country, than had formerly been made.

seems likely to be disappointed. The preliminary census tables as first published, allowed but 538 deaf mutes in Massachusetts; and though these have since been revised so as to increase the number, we have reason to believe that this is still too small by three or four hundred. A member of our Corporation, during the year in which the Clarke Institution was chartered (1867), made a special census of deaf mutes in about threefourths of the State, and obtained the names of about 800, which, with some additions, were deposited with the Board of Education in 1868. From this list it was estimated that the number in the whole State could not then be less than 1,000, when the population of Massachusetts was not more than 1,350,000. In 1870, the population had risen to 1,457,351, and the number of deaf mutes must have been at least 1,050. On the list above mentioned, 752 were entered with particulars of age and sex, and, in many instances, the occasion of deafness, and the time of its commencement were returned. It may be doubted whether a perfect enumeration of deaf mutes, particularly of children under ten years, was ever made in any country; if such a census should be taken in the United States, we believe it would show the whole number of all ages to be more than 25,000. The whole number of children and youth of this class under instruction in the 88 schools, large and small, reported in the United States in 1871, was about 4,000, of whom about 200 were from Massachusetts, or one-twentieth of the whole number. During the year a new day school, with about a dozen pupils, taught by articulation, has been opened at Cleveland (0.), and a small family school, taught by the same method, at Ledyard (Ct.), where one of the teachers is that veteran instructor of a few deaf-mute pupils, Jonathan The day schools at Boston, Pittsburg, and Chicago have been continued, and attended with gratifying success.

In the absence of Miss Rogers, our own school is going on vigorously and successfully in its first term of the school year 1871-2; the teachers have labored diligently, and the classes were never in better training than at present. Our list of pupils, on a subsequent page, is that of the present school year, which began Sept. 20th, 1871, and will close with the long vacation, July 23d, 1872, Of the 44 on the list, two are day-pupils, and 38 are aided by the State of Massachusetts. Several of our more advanced pupils in former years are no longer with us, and one of them, Roscoe

Greene, of Providence (R.I.), who entered the school of Miss Rogers, at Chelmsford, in 1866, and continued here until the summer of 1870, has died during the past summer,—the first of all our pupils whose death we have learned. He was a young man of much intelligence and promise, and had acquired a very ready use of articulation, and a good English education, by the method pursued at this institution. We record his death with much regret.

As usual our school has been visited by large numbers of persons interested in the instruction of deaf mutes, and we perceive no change in the friendly feeling with which it is regarded by the public and by individuals. Our thanks are due to Drs. Fisk and De Wolf for professional services; to the Connecticut River, Boston and Albany and New Haven and Northampton Railroads, for carrying members of the institution at reduced fares; also to Messrs. Marsh, Lawrence, Slate & Baker and Hamlin, for goods sold at a discount. The following publications have been sent to the institution, free:—"Hampshire Gazette," "Child at Home," Deaf-Mute Chronicle," "Deaf-Mute Pelican," "Our Dumb Animals," "Silent World."

Attention is invited to the annexed Report of the School Committee, the financial statement, the list of pupils, and the arrangement of hours of study and recreation.

For the Corporation,

GARDINER G. HUBBARD,

Presiden

NORTHAMPTON, January 1, 1872.

# PORT OF THE SCHOOL COMMITTEE.

orporators of the Clarke Institution.

LEMEN: -In the absence of any report from our Principal, abroad, it seems to devolve upon your Committee to supewhat in its place. To make the school year and the il year more nearly correspond, and to bring the report of rke Institution into harmony as to time with the official of other institutions, you will remember that it was voted der October 1st of each year the beginning of the financial Hence the fifth annual report will cover the period from 1st, 1870, to September 30th, 1871, inclusive. But of iod, no small part was embraced in the fourth annual red for a list of new pupils and their characteristics, as well teresting details given by the Principal as to the classificaogress and compositions of the school down to January 1st, ference should be made to that document. From the official of the Principal, made up at the close of the school year, th, 1871, it appears that, with the first special class, the ourse of instruction was continued, and with gratifying The record says:--" The whole class has made very saty progress during the term." Of the "second special it says:--"They have improved considerably in speaking the term, and in their use of language also. They have the 242d page in Jacobs' Reader. They quite readily, extwo pupils named] " recognize the language of arithmetic tell which principle is involved both in mental and written s. They can perform and analyze examples in the four ary rules, but know nothing of long division. They have ed [the little book called] 'Learning to Talk,' and, in ng to Read' they have reached page 20. They have defined and formed sentences on 260 words. sons on measurement; on locality, from the map of the

States, and in Guyot's Elementary Geography have reached

page 25. The other exercises of last term have been continued. They have also had occasional lessons on inflection, description of pictures and in learning the names of the bones of the human body."

The "class of 1867," so called, really consists of a few who have since joined, and the very young pupils who entered that year without a knowledge even of the alphabet: the pupils more advanced in age or culture, who entered at the same time, having been transferred to one of the special classes. Of this class it is recorded, that "the exercises have been about the same as those of last term. Its members can perform the mechanical operation of addition, and some of them that of multiplication. They know considerable of the multiplication table, and can solve examples in mental arithmetic in addition and subtraction when language is used. They have taken about 270 new words, and have made marked improvement in their use of language."

No class of 1868 is mentioned, because the pupils who then entered, after some months of instruction, were distributed into other classes for which they were severally fitted. Of the "class o 1869," the record says:—" Its members, during the term, have taken about 400 words [to write, pronounce and make the basis of sentences]. Most of the class can write quite a passable de scription of a picture. In numbers they read from the lips and answer, and explain such questions as, How many things are four apples, three books, two oranges, five pencils and six stones They add a column of numbers amounting to one hundred. They can ask and answer a variety of questions. Their improvemen in all directions has been very good during the term " Of the class of 1870, the names of, and particulars with regard to, eight as well as their progress during the first three months, are given in the fourth annual report. After that report was made up, two others came-Ida L. Frost, of Washington, a deaf mute, unin structed, 14 years of age, and George M. Bradley, of Lenox, a semi-mute, who could read a few sentences, 10 years of age Of the progress of this class during its second session, the repor says:-" The seven small children have, during the term, learned 180 new words. They can answer a variety of such questions as-'Is the door open?' by saying, 'No, ma'am, the door is not open it is shut.' 'Is the chair on the table?' 'No, ma'am, the chair is not on the table, it is on the floor.' Most of them can write a tences descriptive of the motions or positions of objects in a ; also of natural objects. They do very well at lip-reading." Laura C. Redden, of whom an account was given in the ort, has continued under instruction during the year. She her voice with increased facility, and reads from the lips eadily.

s made from time to time by your Committee, lead them to that the modest and scrupulous record above quoted fails ey an adequate idea of the amount of good done; and that alts of the year 1870-1, particularly in the matter of mental and development, were highly encouraging. No case of sickness occurred.

ief statement, strictly belonging to the next annual report, to be called for. The number of pupils in attendance at the (January 1, 1872), is 44, a list of whom, including the pils, is hereto appended. The number of teachers is five, pir faithful, energetic services and excellent management no abatement in the prosperity of the school. It was never her condition. A detailed statement of the exercises and as of each class during the first three and a half months of the school year, has been prepared by the teachers, and improved specimens of literary compositions by the pupils ted, all of which is reserved for the next annual report.

ne matter of articulation, Mr. Bell's system has been purith the class of 1871. With only such elements of the system as Mr. Bell could communicate to our teachers in a few better results have been attained in three months than efore in the same period of time; and in the matter of tone, as, modulation and inflection of the voice, results never betained at all. It is hoped and expected that the thorough stion of our teachers by Mr. Bell, at the opening of the next, will add greatly increased facility to this department of stion.

In behalf of the School Committee,

L. J. DUDLEY, Chairman.

THAMPTON, January 1, 1872.

# FINANCIAL STATEMENT OF THE CLARKE INSTITUTION

# FOR THE YEAR ENDING

# **SEPTEMBER** 30, 1871.

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			_			
I. School R	ECEIPTS	AND	Exi	PENSES	<b>.</b>	
The receipts were,—						
Amount included in last Report,		•	•			<b>\$</b> 5,498
Cash on hand February 4, 1871,		•				2,010
			•		•	10,191
from the State of Massa	chusetts,		•			8,625
from pupils,	• •	•	•		•	2,167
Total,		•		•		\$23,492
The expenditures were,—						
For salaries and wages,		•				<b>\$</b> 7,007
groceries and provisions,						8,030
fuel and lights,						1,773
incidentals,		•	•			750
Total school expenses,		•	•			<b>\$</b> 12,561
Balance transferred to estate account	unt, .					10,926
Cash on hand September 30, 1871	, .	•	•		•	3
						\$23,492
II. E	STATE A	.ccou	NT.			
This account was opened in May	y, 1870 ; f	the re	ceipte	have	been,-	
From sale of bonds,	•					\$52,297
loans,						35,000
current funds from school ac		•	•		•	15,641
Total,		•	•		•	<b>\$</b> 102,939

nditu	res l	ave b	een,	_								
ate p	urch	ased,	•						•		<b>\$</b> 31,410 00	
gs and	d rep	oairs,			•	•		•			60,339 75	
ce,	•	•		•	•	•	•		•	•	493 75	
and	payr	nent c	n de	bt,	•	•			•	•	1,541 44	
•	•	•			•	•		•	•	•	275 00	
ng,			•	•		•		•	•	•	7,076 11	
tals,	•	•	•	•	•	•	•	•	•		1,803 07	
tal,		•		•		•	•	•	•		<b>\$</b> 102,939 12	

seen that the school expenses proper (\$12,561 79), are not met by from State and private pupils, the balance being drawn from the he fund. This deficiency will be still more hereafter, as the school crease, while the price of tuition has been reduced from \$400 to for private pupils, and \$250 a year for all State pupils coming from New England States. As the debt is gradually paid off from the he fund, it is hoped that the corporation can reduce the cost of tuition

Names, Residences, &c., of Pupils in the Clarke Institution for Deaf-Mutes, October 1, 1871.

NAMES.	Residence.	Time and Place of Instruction before entering Clarke Institution.	Time of enter- ing Institution.	Age at time of Admission.	Cause of Desiness.
Allen, James D.,	Montague,	1	Sept., 1869,	11 yrs. 11 mos.,	Sept., 1869, 11 yrs. 11 mos., Scarlet sever at 6 years 5 months.
Andrews, Mary E.,	Salem,	1	Sept., 1870,	Sept., 1870, 11 years,	Congenital.
Baker, Joseph,	Milton,	1	Sept., 1871,	Sept., 1871, 13 yrs. 3 mos.,	Scarlet fever at 5 years.
Bowers, Frank E,	Springfield,	. 1	Oct., 1867,	9 yrs. 2 mos.,	Unknown; before 2 yrs. partially deaf.
Bradley, George M.,	Lenox,	Public school,	. Jan, 1871,	10 years,	Cerebro-spinal meningitis at 8½ years.
Bryant, Harriet L.,	Greenfield,	Public school,	. Sept., 1870, 15 yrs.	15 yrs. 9 mos.,	Scrofula at about 2 yrs; partially deaf.
Burbank, James P.,	Salem,	1 year before he became deaf,	. Sept., 1869,	9 yrs. 4 mos.,	Scarlet fever at 6 years 8 months.
Burton, Mary S.,	Lynn,	1	Sept., 1871, 10 yrs.	10 yrs. 2 mos.,	Scarlet fever at 4 years.
Cheevers, Matthew,	Tyringham,	1	Sept., 1871,	8 yrs. 2 mos.,	Injury of head at 3 years.
Coughlin, John,	Boeton,	1	Sept., 1871,	7 yrs. 6 mos.,	Scarlet fever at 84 years.
Ellsworth, Allie,	Northampton, .	1	Oct., 1867,	7 yrs. 3 mos.,	Unknown; at 2 years.
Field, Alice,	W. Westminster, Vt, Public school,	Public school,	. Sept., 1871,	18 yrs. 6 mos.,	Scarlet fever at 10 years.
Forbes, Alice V.,	Sherborn,	14 yrs. at Boston School for Deaf-Mutes,	18, Sept., 1871,	8 yrs. 3 mos.,	Cerebro-meningitis at 18 months.
French, John Y.,	Charlestown,	1	Oct., 1867,	5 yrs. 2 mos.,	Unknown; partially deaf at 2 years.
Frost, Ida L.,	Washington,	1	Jan., 1871,	14 yrs. 4 mos.,	Scarlet fever at 3 years.
Haines, Joel Lupton,	Baltimore, Md., .	1	Sept., 1868,	7 yrs. 6 mos.,	Scarlet fever at 8 years.
Howes, Bertha,	East Dennis,	1	Oct., 1867,	5 yrs. 5 mos.,	Congenital.
Jordan, Harry,	Newton,	1 year at Chelmsford,	. Oct., 1867,	9 years,	Congenital.
Keith, Arthur,	Ludlow,	1 year at Chelmsford,	. Oct., 1867,	7 yrs. 9 mos.,	Unknown; at 2 years.
Keogh, Michael J., .	Maynard,	1	Nov., 1867,	9 yrs. 6 mos.,	Scarlet fever at by years.
Kirwin, Alfred R.,	South Boston, .	1	Sept., 1868,	7 yrs. 7 mos.,	Measles, at 1 year.
			-000	9.5	Caralta famou na El mone

ц, 44	; Total,	19;	25; Girls,	er of Boys,	Whole number of Boys,
Sept., 1871, 13 yrs. 1 mth., Scarlet fever at 3 years.	13 yrs. 1 mth.,	Sept., 1871,	Lockport, N. Y., .   5 years at Hartford Asylum,	Lockport, N. Y.,	Willey, Florence,
Congenital.	9 yrs. 10 mos.,   Congenital.	Oct., 1867,	1	Bangor, Me., .	Whittier, Mary Emma, .
Meningitis at 11 years.	13 yrs. 2 mos.,	Sept., 1869,	Public school before she became deaf, .	Worcester, .	Ware, Josephine M.,
1 mth., Congenital.	5 yrs.	Jan., 1868,	,	West Haven, Conn.,	Ward, Josephine,
Congenital.	7 yrs. 2 mos.,	Oct., 1867,	1	West Haven, Conn.,	Ward, Harry K.,
Humor; 1 year 4 months.	7 yrs. 8 mos.,	Oct., 1867,	1	East Boston,	Towle, Lewella,
Scarlet fever at 9 years 4 months.	11 yrs. 9 mos.,	Sept., 1870, 11 yrs.	Public school before he became deaf, .	Newburyport, .	Titcomb, Hubert S.,
Measles at 1 year.	7 yrs.	Oct., 1867,	1	Charleston, S. C., .	Sawyer, George C.,
Measles at 1 year.	7 yrs. 2 mos.,	Sept., 1870,		Hallowell, Me.,	Russell, Emma Mary, .
Severe cold at 15 mos.; partially deaf.	7 yrs. 11 mos.,	Sept., 1870,	1	East Boston,	Roby, Fanny,
Fall at 3 years.	7 yrs. 7 mos., Fall at 3 years.	Sept., 1871,	1	Boston,	Roberts, John,
,	1	Oct., 1870,	1	New York City, .	Redden, Laura C., .
8 yrs. 9 mos., Scarlet fever at 3 years 2 months.		Oct., 1867,	4 months at Chelmsford,	Wrentham,	Porter, Isabel E., .
Scarlet fever between 1 and 2 years.	Sept., 1869, 7 yrs. 2 mos.,	Sept., 1869,	•	Ipswich,	Perley, Lyman,
Sept., 1868, 11 yrs. 1 mth, Scrofula at 20 months.	11 yrs. 1 mth,	Sept., 1868,	•	Bridgeport, Conn.,	Nevers, Harry W.,
8 yrs. 5 mos., Typhoid fever at 4 years.		Sept., 1868,	1	Boston,	McNeil, John,
Congenita.	·   Sept., 1000,   10 years, · ·   Congenital.	'ogor 'ndac	·   There at Cheliminotti, · · ·	South Deansm,	MOTSE, WRITEL F.,

# ORDER OF THE DAY AT THE CLARKE INSTITUTION.

Rise,				•		•						. 6	
Housewo	rk,			•	•	•		•	•			. 61	
Breakfas	t,	•		•								. 7	
Devotion	al ex	kercis	es,		•				•	•		. 8	
School,	•	•	•	•		•	•					. 81	
Play,							•				•	. 11 <u>i</u>	
Dinner,	•			•	•	•	•					. 12	
School,	•	•	•					•			•	. 1	
Girls sew	, lar	ger b	oys w	ork i	n car	pente	rs' sh	op,	•			. 3	
Play,		•	•	•	•	•		•		•	•	. 4	
Supper,												. 51	
Play,		•	•								•	. 6	
Study,	•			•	•	•	•	•	•			. 61	
Retire,		•	•	•	•	•		•	•	•		. 81	
_						_	_		_		_		

Some of the younger children remain in school a less number of hour retire at seven P. M.

# SUNDAYS.

Study the Sabbath-school lesson one hour.

Attend various churches with the teachers and attendants.

After dinner walk for an hour.

Sabbath-school lessons with the teachers in the P. M.

In the evening, the older children devote from one to two hours to re and devotional exercises.

# TERMS OF ADMISSION.

nstitution is especially adapted for the education of semi-deaf and semipils, but others may be admitted. It provides for the pupil's tuition, adging, washing, fuel and lights, superintendence of health, conduct, and morals.

harges are three hundred and fifty dollars a year; for tuition alone, ollars; payable semi-annually, in advance, the first week of each term. ction, except for absences on account of sickness. Extra charges will for actual expenses incurred during sickness. No pupil will be allowed aw before the end of the second term in July, without weighty reasons to ped by the School Committee. The contract is for the entire school-year, of terminated by the winter vacation.

tate of Massachusetts appropriates annually funds for the education of nutes. The Institution, also, appropriates the income from its funds for f beneficiaries from Massachusetts, according to their need. Forms of on for the State aid will be furnished by the Secretary of the Commonry by the Institution.

are two terms in the year, of twenty weeks each; the first commencing ird Wednesday of September with a vacation of four weeks in winter; d commencing on the first Wednesday of March, with a summer vacaght weeks. Pupils cannot spend the vacation at school. It is desirated all applications for admission for the succeeding year made as early. The year begins on the third Wednesday of September. None will ted at any other time, unless they are fully qualified to enter classes formed, and on payment of the full tuition for the term in which they

upils must bring good and sufficient clothing for both summer and winbe furnished with a list of the various articles, each one of which should ad, and also with paper, envelopes and stamps. A small sum of money, han five dollars, should be deposited with the Principal for incidental

ations and letters for information must be addressed to the "Principal arke School for Deaf-Mutes, Northampton, Massachusetts," with a stamp a postage. All payments should be made to the Treasurer, Lafayette Northampton.

must be at least five years old on entering the Institution, and must ertificate of vaccination, and a list of the diseases they have had. The n is not an asylum, but a school of learning; and none can be admitted ad who have not the ordinary growth and vigor of mind and body, and bits.

s from Northampton are admitted Thursday afternoons. Strangers at excepting Wednesday and Saturday afternoons and Sundays.





MERICAN ASYLUM AT HARTFORD.

# AMERICAN ASYLUM AT HARTFORD.

# Bourd of Birectors.

President.
HON. CALVIN DAY.

#### Vice-Presidents.

JAMES B. HOSMER, CHARLES GOODWIN, JOHN BEACH, HENRY A. PERKINS, SAMUEL S. WARD, ROLAND MATHER, NATHANIEL SHIPMAN, LEONARD CHURCH.

#### Directors.

(By Election.)

LUCIUS BARBOUR,

GEO M. BARTHOLOMEW,

JOHN C. PARSONS,

PINCKNEY W. ELLSWORTH,

ERASTUS COLLINS,

JONATHAN B. BUNCE,
OLCOTT ALLEN,

ROWLAND SWIFT,

FRANCIS B. COOLEY,

JOHN C. DAY.

#### (Ex Officio.)

- HIS EXCELLENCY, SIDNEY PERHAM, Governor of Maine.

  HON. F. M. DREW, Secretary of State.
- HIS EXCELLENCY, JAMES A. WESTON, Governor of New Hampshire.

  HON. —————, Secretary of State.
- HIS EXCELLENCY, JOHN W. STEWART, Governor of Vermont.

  HON. GEORGE W. NICHOLS, Secretary of State.
- HIS EXCELLENCY, WILLIAM CLAFLIN, Governor of Massachusetts.

  HON. OLIVER WARNER, Secretary of State.
- HIS EXCELLENCY, SETH PADELFORD, Governor of Rhode Island. HON. JOHN R. BARTLETT, Secretary of State.
- HIS EXCELLENCY, MARSHALL JEWELL, Governor of Connecticut.

  HON. HIRAM APPELMAN, Secretary of State.

Secretary,
JOHN C. PARSONS.

Treasurer.
ROLAND MATHER.

# Officers und Tenchers.

#### Principal.

#### EDWARD C. STONE, M. A.

# Instructor of the Gallaudet Scientific School. JOHN C. BULL, M. A.

#### Instructors.

ID E. BARTLETT, M. A., MARY A. MANN, N R. KEEP, M. A., MABEL M. BARTLETT, iard s. storrs, m. a., MARY E. HASKELL, WILLIAMS, M. A., CAROLINE C. SWEET, L S. CLARK, M. A., KATE C. CAMP, SON WHITON, ELMINA D. CLAPP. LIAM H. WEEKS, TEET, . Teacher of Articulation. TONE, . . Teacher of Drawing. т, **м**. **D.**, . . . Attending Physician. ENNEDY, . . . . . . Steward. CROSSETT, . . . . . . . . Assistant Steward. BE C. WHITE, . . . . . Matron. ECCA A. CADY, . . . . Assistant Matron. CY DILLINGHAM, . . . . . . . Master of the Cabinet Shop. EWIS, . B. FLAGG, . Master of the Shoe Shop. 

Mistress of the Tailors' Shop.

# REPORT OF THE DIRECTORS.

To the Patrons and Friends of the American Asylum.

In any review of the fifty-fifth year of the Asylum, which has just closed, the first thought which occurs to any of its manager is, the special losses we have lately sustained by death.

Rev. Collins Stone, who had ably and most successfully filled the office of Principal of the Asylum since August, 1863, whi driving with a friend, on the 23d of December, 1870, was struc by a train from New Haven, at the Sigourney Street railros crossing, in Hartford, and almost instantly killed. Our who city, the great circle of the deaf and dumb throughout the cou try, and the widely scattered friends of Mr. Stone were shocked and deeply grieved by this tragic and deplorable event. To the members of this Board, and to all who were in any manner pe sonally interested in the Asylum, or responsible for its manag ment, the loss of Mr. Stone seemed almost irreparable. The were other learned and skilful instructors of the deaf and dum but none whose health, age and knowledge of the history as requirements of our institution appeared to qualify them to f completely and satisfactorily Mr. Stone's vacant place. Aft much consideration, Mr. Edward C. Stone, the oldest son of o late Principal, then at the head of the Wisconsin Institute f the Deaf and Dumb, was chosen to succeed his father. T trustees of the Wisconsin Institution were reluctant to part wi their chief instructor and manager, but kindly yielded to o request, and Mr. Stone was able to assume the duties of Prin pal of the Asylum about the middle of February last. So far the Directors are permitted to judge from the short experien of Mr. Stone in his new position, as well as from his previo training and labors elsewhere, among the deaf and dumb, th feel disposed to congratulate themselves and the friends of t Asylum upon their choice, and to anticipate for Mr. E. C. Sto a career of increasing usefulness and success.

y tributes to the character and services of the late Mr. s Stone have been brought to the notice of the Directors. of a public or official nature are appended to this Report, er with the resolutions passed by the Directors at their meeting, held December 26, 1870. Mr. Samuel Porter, friend and associate of Mr. Stone, has recently contributed "Annals" a memorial paper, some extracts from which iso be printed in the appendix, as the latest and most care-prepared estimate of Mr. Stone's life and labors.

re will also be found appended, the resolutions of the , in March, 1871, on the occasion of the death of Mr. Bar-Hudson, one of the original corporators of this Asylum in Mr. Hudson, though originally one of the youngest memf this society, was from the outset a zealous and efficient r in its behalf, and continued in its active service to the urviving all but four of his early associates. He was Secand Clerk from 1834 to 1860, and chairman of the Directemmittee from 1836 to the time of his death. About eight s before his decease, he was attacked by a disease which citated him from constant and active discharge of his I duties; but they were still performed under his superinnce, and only the day before his death he conversed with. animation on matters connected with the Asylum. equaintance with the history of this Institution, from its nception, and his intimate knowledge of the details of its ess affairs and local interests, make his death a peculiar and s loss to the Board. His warm interest in the Asylum and eerfulness of youth, which he never lost, will long keep his ry fresh among his fellow-laborers in this place.

de from these changes which death has made in our ranks, ag has occurred during the past year to call for special of the report of the Treasurer is encouraging, and the nent of the fund shows, when compared with previous nents, that the encroachments upon it several years since, d by the sudden and unprecedented increase of the expenses ing, have been made good. The income of the fund, howthough considerably increased by judicious and prosperous gement, is relatively less than formerly in proportion to the sarily greater expenses of the present time.

ing to the temporary absence of Dr. Hunt, the usual report

of the Physician has not been presented. We are, however, at to say, that the health of our inmates, during the year, has be remarkably good, and that we have seldom had greater reas for thankfulness in this respect.

The accompanying reports and tabulated statements will int est all connected with this or similar institutions, and we refer these documents with more than ordinary satisfaction.

In behalf of the Directors,

J. C. PARSONS, Clerk.

HARTFORD, April 29, 1871.

# RESOLUTIONS.

At a meeting of the Directors of the American Asylum, Hartford, for the Education and Instruction of the Deaf a Dumb, held at their office on the 26th day of December, 18' Calvin Day, Esq., President, in the chair, the following reso tions were adopted:—

"WHEREAS, This Board has been convened to express our sorrow at sudden and melancholy death of the Rev. Collins Stone, who was for ninet years a teacher in the Asylum, and has been for the past seven years Principal:

"Resolved, That this calamity, which has filled the hearts of this commun with grief, touches this Board in an especial manner, and that we sadly rec our appreciation of the great loss which the Asylum has sustained by the de of the Principal. He brought to his responsible position an intellect of me vigor and force, thorough and earnest convictions of duty, great industry a executive ability, quiet firmness of character, dignity and courtesy of demean a love for the unfortunate, and a willingness to work in their behalf with ent siastic constancy. In the administration of the affairs of the Asylum, he labor earnestly and unweariedly, and with most gratifying success. His long expe ence in the profession, and his thorough acquaintance with its principles, ea nently qualified him for the position he occupied, and placed him among most distinguished instructors of the deaf and dumb. While we cannot l deeply mourn his departure from among us as a personal no less than a put loss, yet the life of Christian activity which he led, inspires in our heart blessed and comforting assurance that, though his summons came without no of warning, he received the Master's promised welcome to a rest eternal a crown unfading.

"Resolved, That as a token of our respect, we will attend his funeral in body, and that the Clerk of the Board transmit a copy of these resolutions the family of Mr. Stone.

J. C. PARSONS, Clerk."

Instructors of the American Asylum desire to express use of the great loss which the institution has sustained death of its late Principal, the Rev. Collins Stone. To ep feeling of personal bereavement is added a sense of pubnity which none others can realize so fully as they. None w, as they do, how tireless was his energy and vigilance, ascientious and unshrinking his faithfulness in every duty, w his own earnest personality pervaded the entire institucting and impelling all—yet in the least obtrusive mansimilar promptitude and faithfulness. He was indeed to a daily duty, and will ever be in memory, a most beloved e and friend, whose loss is well nigh irreparable.

ICAN ASYLUM, December 27, 1870.

ollowing extracts are presented from the brief Report of cipal:—

ne intellectual department, the results attained are believed to equal to those of former years; and, although the progress is w, and the labor of instruction arduous and perplexing, the es imposed upon our pupils by their misfortune are gradually e, and we see them going out with their minds cultivated and ned by truth, restored to society, and fitted to be a blessing to ends and to reflect honor upon the institution. Thirty-nine t at the close of the last term, three of whom are pursuing lies further at the National Deaf-Mute College, at Washinge two hundred and sixty-two pupils now under instruction ed into fourteen classes, two of which are composed of new no entered last fall. The class in articulation has been conit was organized the previous year. Instruction in lip-readspeaking, as an art, rather than as a means of imparting ge, has been given, to those most likely to profit by it, for a f each day, while their education has been carried on by the sign language in their regular classes. Thirty-five pupils a so taught during the year; several have been dropped as ing subjects; and at present the class consists of twenty-two, whom are semi-mutes. The improvement made in this branch ction is commendable.

"Within the past year, the subject of day-schools for the deaf dumb, where the children board at home and are taught for for five hours a day, as other children are, has received some attention this country, and schools of this kind have been opened at Pittsl Boston and Chicago. They must of necessity be confined to the v ity of large cities, and are not practicable elsewhere. The early struction of mute children is very desirable, and the philanth which searches our great cities, where most of them are found an the poorest and lowest classes, and which seeks to elevate them serves our highest commendation. Still, while the influence of a ordered home is so happy, the disadvantages of one that is not as great, that our large institutions, caring for the physical, intelled and moral welfare of their pupils, in every way, and all the time, also providing instruction in the trades, would seem to be be adapted to the needs of these neglected ones than day-schools can Much good can undoubtedly be accomplished in the day-schools be the child is old enough to be sent away from home, and the resul these benevolent enterprises will be looked for with great interes

# TERMS OF ADMISSION.

e Asylum will provide for each pupil, board, lodging and washing, the al superintendence of health, conduct, manners and morals, fuel, lights, ry, and other incidental expenses of the school-room; for which, includ-ITION, there will be an annual charge of one hundred and seventy-five

In case of sickness, the necessary extra charge will be made.

No deduction from the above charge will be made on account of vacation nce, except in case of sickness.

Payments are always to be made six months in advance, for the punctual nt of which a satisfactory bond will be required.

ach person applying for admission must be between the ages of RIGHT ENTY-FIVE years; must be of a good natural intellect; capable of forml joining letters with a pen, legibly and correctly; free from any immoof conduct, and from any contagious disease.

ications for the benefit of the legislative appropriations in the States e and New Hampshire should be made to the Secretaries of those States ively; in Massachusetts, to the Secretary of the Board of Education: case stating the name and age of the proposed beneficiary, and the tances of his parent or guardian. Applications as above should be n Vermont, Rhode Island, and Connecticut respectively, to His Excelhe Governor of the State. In all cases, a certificate from two or more selectmen, magistrates, or other respectable inhabitants of the township e to which the applicant belongs, should accompany the application.

e applying for the admission of paying pupils may address their letters to ncipal of the Asylum; and on all letters from him respecting the pupils, will be charged.

time for admitting pupils is the second Wednesday of September, and at r time in the year. Punctuality in this respect is very important, as it be expected that the progress of a whole class should be retarded on t of a pupil who joins it after its formation. Such a pupil must suffer onvenience and the loss.

earnestly recommended to the friends of the deaf and dumb, to have aught to write a fair and legible hand before they come to the Asylum. n be easily done, and it prepares them to make greater and more rapid ement.

n a pupil is sent to the Asylum, unless accompanied by a parent or some who can give the necessary information concerning him, he should bring en statement embracing specifically the following particulars: -

- 1. The name, in full.
- 2. Post-office address, and correspondent.
- 8. Day, month, and year of birth.
- 4. Cause of deafness.
- 5. Names of the parents.
- 6. Names of the children in the order of their age.
- 7. Were the parents related before marriage? If so, how?
- 8. Has the pupil deaf-mute relatives? If so, what?

The pupil should be well clothed; that is, he should have both summer a winter clothing enough to last one year, and be furnished with a list of various articles, each of which should be marked. A small sum of money, less than five dollars, should also be deposited with the Steward of the Asyle for the personal expense of the pupil not otherwise provided for.

Packages of clothing, or boxes, sent by Express, will reach the pupils safe

The Express charges should in all cases be prepaid.

Careful attention to these suggestions is quite important.

There is but one vacation in the year. It begins on the last Wednesday June, and closes on the second Wednesday of September. It is expected the pupils will spend the vacation at home. This arrangement is as desira for the benefit of the pupils, who need the recreation and change of scene for the convenience of the Institution, thus affording opportunity for the new sary painting, cleansing, &c. The present facilities for travel enable most of pupils to reach home on the evening of the day they leave Hartford. Even pupil is expected to return punctually at the opening of school, on the second wednesday of September.

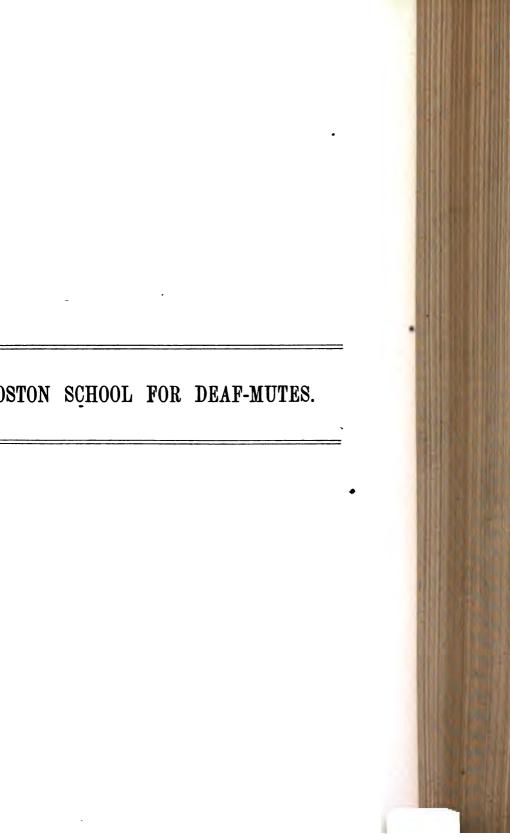
On the day of the commencement of the Vacation, an officer of the Asyl will accompany such pupils as are to travel upon the railroads between Hartfe and Boston, taking care of them and their baggage, on condition that the friends will make timely provision for their expenses on the way, and engage meet and receive them immediately on the arrival of the early train at varie points on the route previously agreed on, and at the station of the Boston a Worcester Railroad, in Boston. A similar arrangement is made on the Connecticut River Railroad as far as to White River Junction. No person will be seftom the Asylum to accompany the pupils on their return, but if their fare paid, and their trunks are checked to Hartford, it will be safe to send them charge of the Conductor.

the Beneficiaries of Massachusetts in the American Asylum or the education of Deaf and Dumb, January 1, 1872.

NAME		Residence.		Age.		Admission.		
Acheson,		West Randolph,		17 years	, .	Sept. 1864.		
cheson,		"		11 "		1869.		
E Anderson.		S. Framingham,		13 "		1867.		
Barrett, .		Plymouth, .		19 "	•	1865.		
Bass.		Chicopee, .		17 "	•	1869. ·		
astin, .	:	Pittsfield,		18 "		1865.		
Benjamin, .		Williamstown,		25 "		1869,		
. Callender,		Cambridgeport,		10 "		1869.		
Carter, .		Boston,		18 "	•	Oct. 1866.		
Clark, .	•	Easthampton,		12 "		Sept. 1867.		
rk,		Monson, .		17 "		1865.		
. Chapman,		Cambridgeport,		16 "		1865.		
omey, .		Foxborough, .		11 "	•	1868.		
onners, .	•	Mansfield, .		15 "		1865.		
Crain,		Milford,		10 "		1870.		
Crocker,		Barnstable, .		12 "	٠.	1869.		
Drew,		Boston,		15 "		1865.		
Duran.		South Boston,		16 "		1865.		
Estabrook,.		Assabet,		12 "		1870.		
rley,		Lowell,		18 "		1868.		
eming,	•	Barre,		12 "		1869.		
Frisbee,	•	Charlestown, .		16 "	•	1866.		
nbol,	•	South Boston,		17 "		Oct. 1864.		
Gerry,	:	Charlestown, .		18 "		Sept. 1868.		
Gardner,	:	Hardwick.		16 "		186 <del>4</del> .		
Harorave.	:	P. D.		14 "		1867.		
Hargrave, Hawley,	:	Leverett, .		11 "		1869.		
lawley,		"		16 "		1865.		
Hawley, .	:	u		18 "		1865.		
Hayden .	:	Stoughton, .		18 "		1868.		
Hayden, . Jellison, .	:	Lynn, .		12 "		Oct. 1870.		
P. Josselyn,	:	East Foxborough,		18 "		Sept. 1863.		
Kellaber, .	:	Sandwich, .		12 "		1869.		
C. Knight,	•	West Boylston,		17 "		1868.		
Lucy, .	:	Haverbill, .		12 "		1868.		
W. Larvey, .	:	Gloucester,		13 "		1868.		
kintosh,		Canton, .		16 "		• 1864.		
Carty,	•	Andover, .		16 "		1865.		
McWilliams,	•	Fall River,		15 "		1870.		
cham,	•	Chester, .		13 "		1868.		
leil,	•	Palmer,		12 "		1867.		
O'Neil,	•	Springfield,		15 "		1866.		
Paul,	•	1 Cambridgenan	•	11 "	÷	1867.		
. Perry,	•	Milton,	•	13 "	:	1868.		
	. •	10 4	•	16 "	:	1865.		
wers,	•	1 <b>2</b> <i>2</i>	•	16 "	:	1865.		
nincy,	•	D - 4	•	14 "	:	1866.		
Roberts, .			•	13 "	•	1869.		
haler,	•	Palmer,	•	-0	•			
						<u> </u>		

# List of Beneficiaries of Massachusetts, &c.—Concluded.

NAME.		Residence.	Age.	Admissio
Joseph W. Soper, .		Lowell,	12 years, .	Sept. 186
Wilber N. Sparrow, .	•	Eastham,	18 " .	186
Ebenezer E Staples,.	•	Taunton,	12 " .	186
Frank Streeter, .		Northfield,	12 " .	186
Samuel A. Tufts, .	•	Malden,	15 " .	186
Samuel Wardman, .		Andover,	16 " .	186
Benj D. West,		Chilmark,	18 " .	186
Charles E. Wood, .		Boston,	13 " .	186
John McGinnis, .		Worcester,	25 " .	187
John F. Carrigan, .		Littleton,	10 " .	187
Wm. F. Young, .		Boston,	19 " .	187
Alda M Adams, .		Charlestown,	16 " .	186
Ada J Barnard, .		Lowell,	16 " .	186
Edith A. Boynton, .		Enfield,	10 " .	186
Mary Carey,		Boston,	17 " .	186
Abby L Chaffin,		Worcester,	15 " .	186
Bridget Coggins, .		Lowell,	15 " .	186
Ellen Duffy,		Boston,	16 " .	186
Honora Fahy,		Pittsfield,	11 " .	186
Martha A. French, .		Tewksbury,	11 "	187
Annie Glinnon, .		Jamaica Plain,	10 "	186
Sarah Hawley,		Leverett,	10 "	186
Mary J. Hawley, .		"	10 - "	187
Mary J Lee,		East Longmeadow,	14 "	186
Elizabeth Martes, .		Charlestown,	15 "	186
Elizabeth McDonough,		Russell,	17 "	186
Morcellia Meacham, .		Chester,	14 "	186
Eliza O'Hearn.		Tewksbury,	19 "	186
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Mary Quinn,	:	Williamstown,	ii "	186
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Margaret Reekie,	•	"	17 "	187
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Lizzie A Stevens, .	•	Gardner,	14 "	Sept. 186 186
Marri A Starrana	•	Classacton	10 "	186
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#### BOSTON SCHOOL FOR DEAF-MUTES.

[Statement of GEORGE F. BIGELOW, M.D., one of the Committee, furnished by reque

Committee.—IRA ALLEN, M. D., Chairman; SAMUEL G. BOWDLEAR, HE S. WASHBURN, LIBERTY D. PACKARD, M. D., Rev. GEORGE F. HASE LUCIUS SLADE, GEORGE F. BIGELOW, M. D.

Instructors.—Miss SARAH FULLER, Principal; Miss Annie E. Bond, Ellen S. Barton, Miss Mary H. True.

List of Pupils.

				A	GE.					
NAME.				Yrs. Mos.		Residence.	Date of Admis			
Harry E. Babbitt,	•		•	10	2	Boston,		Oct. 4, 18		
Jeremiah Cahalan,	•	•	•	9	2	• •	٠	Nov. 10, 18		
Mary E Carroll,	•	•	•	14	11	Charlestown, .	•	10, 18		
Lizzie E Chaffin,	•	٠	• }	6	8	Brookline, .	•	Apr. 10, 18		
Emma Collins,	•	•	•	9	7	Boston,	•	Dec. 13, 18		
Michael Coughlan,	•	•	•	10	7	"	•	Nov. 10, 18		
John Coughlan,	•	•	•	7	9		•	10, 18		
Samuel S. Cross,	•	•	•	17	2	Beverly,	•	Dec. 5, 18		
George E. Dailey,	•	•	•	8		East Cambridge,	•	May 2, 18		
Julia A. Driscoll,	•	•	•	20	4	East Boston, .	•	Jan. 19, 18		
Joseph Finnegan,	•		. !	11	7	Boston,	•	Nov. 22, 18		
Isabel Flagg, .	•	•	•	17	10	"	•	30, 18		
Alice V. Forbes,			•	8	7	Sherborn, .		30, 18		
Jane Howes, .	•		. !	11	8	Boston,		Jan. 31, 18		
Jeremiah Hurley,				14	5	East Cambridge,		10, 18		
Alice C. Jennings,				20	10	Auburndale, .		Sept. 19, 18		
Honora Kenney,	•			9	1	Boston,		Jan. 6, 18		
John S. Kenney,				9	1	Woburn, .		Oct. 18, 18		
Annie R. Leavitt.	-	•		7	2	Boston, .		Nov. 1, 18		
Leah Leudoza.	-	•		12	5	"		Apr. 18, 18		
Mary A. Linehan,	•	•		16	5	"		Nov. 10, 18		
Michael Lynch,	•	•		10	8	"		Apr. 18, 18		
lda L. Marshall,	•	•	:1	9	4	Lowell.		Nov. 15, 18		
Catherine McDonale	ä	•	1	15	7	Boston,	- 1	10, 18		
Charles G. Merry,	4,	•	•	12	10	"		Dec 13, 18		
Ella D. Moore,	•	•	•	14	10	Lawrence,				
Martin Mullen.	•	•	•	10	)		٠,	Sept. 6, 18		
	•	•	•		7	South Boston,	.1	Nov. 11, 18		
Ignatius Murphy,	•	•	•	9	7		.	15, 18		
			ı		, ,	i	- 1			

<sup>\*</sup> Date of dismission May 1, 1871.

<sup>‡</sup> Date of dismission Sept. 4, 1871.

<sup>†</sup> Date of dismission June 26, 1871.

<sup>§</sup> Date of dismission June 80, 1871.

				A	QE.	1					
NAME.					Mos.	Re	side	nce.	Date of Admission.		
D'Brien, onnell,				9 12	. <b>7</b>	Boston,				June 27, 1870. Dec. 6, 1869.	
rra, Orcutt,	•	•	•	10	8 5	u	:	•	•	Nov. 10, 1869. 15, 1869.	
e, . Pierce,	:	:	•	8 17	4 5	"	•	•	:	10, 1869.	
an,.	•	•	•	10	5	"	•	•	•	May 19, 1871. Nov. 10, 1869.	
rts, . Robinson	a,	•	•	6 16	10	66	:	•	•	May 31, 1870.* Sept. 6, 1870.	
omas, Tripp,	:	•	•	9 8		66	•	•	•	Nov. 14, 1870. 22, 1869.	
hite,	•	•	•	8 11	1	"	:	•	•	Oct. 17, 1870. Nov. 23, 1869.	
Vood,	•	•	•	9	1	"	•	•	•	Sept 8, 1870.	

#### Admitted since commencement of term 1871-72.

		1		1	1
	•	8	6	Boston,	Dec. 12, 1871.
	•	14		"	Sept. 20, 1871.
	•	5		"	25, 1871.
	•	7	10	West Roxbury.	Nov. 1, 1871.
		8		Boston,	17, 1871.
	•	18	11	"	Oct. 2, 1871.
		10	7	Charlestown	0 4 1071
		7	10	Natick	Feb. 15, 1872.
•	•	20		Boston,	Sept. 4, 1871.
					, ,, ==, ==
	,		14 5 7 8 10 7		 

<sup>\*</sup> Date of dismission Nov. 30, 1870.

one of the Public Day Schools of the city of Boston, and of the other schools it is under the charge of a special appointed annually by the School Board from its own The whole number of pupils during the year was 41, verage attendance of 37. The School was established in was designed to furnish instruction to deaf-mute chilning in the city without the necessity of sending them sions at a distance from their homes. The method purthat in the Clarke Institution, is known as the German The manual alphabet and the sign language are not, but the pupils are taught to speak and to read the lamothers from the lips. In carrying out this system, even d experience of the School, the first of its kind in this ndicates a great advantage enjoyed by children living at

home, where they are surrounded by hearing persons, and thus incited to use the power of speaking as they acquire is school, over those of the same class congregated in numbers upone roof, where the temptation to communicate by signs is so stant that they fail to employ their acquired power of speeces they would otherwise do. At home, too, they form a part of family circle, with common interests and sources of occupa and amusement, and as they become able to communicate those about them in a common tongue, they gradually cease, in feeling and in fact, to belong to a peculiar and unfortunate constitution out by their infirmities from the world, and unable to mi in the enjoyments of social life.

When the School opened, the youngest class, composed of po between the ages of seven and ten years, was wholly u quainted with the written or printed forms of letters. They now perfectly familiar with both, and have a vocabulary of ne five hundred words, which they form into as many sentences, they have acquired sufficient command of language to enable t to communicate their simple wants and to give intelligent ans They also understand directions expresse to many questions. a variety of ways. Such sentences as the following are recomprehended: "All of the Third class, except Joseph, may from their small books."-" You must not be rude whe play."--" Ask Daniel if he wants to go to the store and buy lunch."—" Please get your books and bring them to me." T children read from the lips of the teachers the most fam words and sentences, and will also read the same from the li any person, although not so readily. The progress of all the dren in language has been highly satisfactory. All the bran comprised in the Grammar and Primary School courses are taught, except singing. The school has been graded and cl formed corresponding nearly to the several grades in the schools, though the series will not be complete until the begin of the next year, when a "First Class" will be organized.

During the month of April of the present year, a highly in tant feature was added to the methods of instruction employs the school, concerning which too much cannot be said in mendation. This was the introduction of the system of "ible Speech," invented by Professor Alexander Melville Be London. "The fundamental principle of the system is, the

s of sound are symbolized by relations of form. Each nd each mode of organic action concerned in the product modification of sound has its appropriate symbol; and all of the same nature produced at different parts of the are represented by a single symbol turned in a direction onding to the organic position."

first application of the system to the instruction of deaf vas made in 1869, in South Kensington, England, by Mr. ham Bell, a son of the inventor, with a small class in a school. "No difficulty was found in giving the idea of bols to four children, the eldest twelve, and the youngest ears of age, and nearly all the elementary sounds of Engre obtained from them in a few days." Mr. Bell was invisit Boston for the purpose of imparting the system to chers and pupils in its deaf-mute school, and was so emduring the months of April and May, with results equally ng and surprising. "On the 13th of June a public exhibis given of the condition of the school, and it was shown e very youngest children had comprehended the meaning symbols. Taking the school as a whole, it was found that the month of May over three hundred English sounds, the pupils had formerly failed to utter by imitation, had btained by means of 'visible speech.' Class illustration ven of the pronunciation of syllables with differences of and quantity, and individual illustration of the perfect ce of words and sentences. Adult deaf mutes were present ad acquired all the sounds of the English language in ten , and who could articulate a large number of words with e correctness. One pupil of the school, to whom special tions had been given in the principles of elocution, read llow's 'Psalm of Life,' from elocutionary marks with and expressive inflections of the voice."

applicability of this simple and beautiful system of symbols nstruction of congenital mutes, as well as of those partially who have lost their hearing, renders it a priceless boon to aged in imparting articulation to deaf mutes, and arrangehave already been made for Mr. Bell to visit Northampton artford, and to introduce his system into those institutions.

REPORT OF A COMMITTEE UPON THE NEW METHOD OF INSTRUCT FOR DEAF-MUTES, DECEMBER, 1871.

An examination took place in the School for Deaf Mutes at Pemberton Square, of several pupils, deaf and dumb, who he been for three months under the instruction of Mr. A. Grah Bell. The effects produced by this instruction are in the high degree wonderful; indeed, almost miraculous. Several g have been taught to utter distinctly all the sounds of the language and one of them pronounced accurately words offered by gen men present, from a European and from an Oriental langua containing strange sounds not belonging to our language. Other, Miss Flagg, recited, in a sweet and natural manner, we all the inflections and modulations that a well-taught hearing g could have given, a comic quarrel between a husband and we about "Is it a thrush or a starling?"

At the end of the examination Mr. Philbrick, Superinte ent of the Boston Schools, was requested by a unanimous vote take measures to procure a hall sufficiently large to accommod a much larger audience and to arrange for a future meeting, a another committee was chosen to report the perfect success of Bell's methods, and to invite all persons, especially those interest in the marvellous powers of the human voice, and those who we to see for themselves the original scientific methods by which can bestow, upon those from whom it has been withheld, the power of communicating their thoughts and feelings by the use of thuman voice divine,—that every mother who has never heard the child speak may hope to hear it in a pleasant, natural voice.

Mr. Bell is the son of the gentleman in London, Professor Melville Bell, who first—by unwearied experiments on the organ of speech—invented what he calls "visible speech," an invention which promises to give complete success to the art of teaching the deaf and dumb to speak. Mr. Bell began by giving a rapid count of the invention, and exhibited on the blackboard the chacters of symbols devised, which are an imitation of the parts the organs of speech used in the utterance of the several soun He then stated that the object of the experiments he had be making, during the last three months, has been to test the post-bility of educating the mouths and voices of deaf mutes. He troduced to us two young ladies who had, during that time, be

is instructions: Miss Alice C. Jennings, daughter of the Jennings of Auburndale, and Miss Theresa Dudley, r of the Hon. L. J. Dudley of Northampton, and asked attention to the latter, who is a congenital mute. ucated at home, at the institution at Hartford, Conn., and years under Miss Rogers, Principal of the Northampton ion where she had been using her vocal organs.

ptember, Superintendent Philbrick, Secretary White, Dr. n, Chairman of the Boston School for Mutes, and several entlemen had examined the condition of Miss Dudley's tion, that Miss Rogers might have full credit for the very ul work she had accomplished; and that the improvement the principles of "visible speech" might be justly appre-The defects had been shown to be in sounds of o, the nts w, r, l, and in all the double consonants; indistinct. fficulty of understanding her conversation or reading. owing points were also observed :--

. That a few of the elementary sounds were defective. vere the vowels in the words pool, pull, pole, Paul and poll, consonants wh, w, r, l. The vowel ee was only occasionrect.

d. All double consonants were defective. For instance, , ch, j, &c.

I. Rapidity of utterance had been gained at the expense of ness.

th. It was difficult for strangers to understand her converand impossible for them to follow her reading.

. Her voice was under no sort of control, and it was not in quality.

Bell says: "Miss Dudley has been under my instruction for onths. The improvement manifest may be emphatically d up in the one word 'power.' She has obtained power instrument of speech,—such power that she can produce nentary sounds of foreign languages as well as those of , by merely studying their symbols; that she can vary her quality as well as pitch, sustain it on one level, or inflect l, and that she can appreciate certain musical intervals. we devoted principal attention to Miss Dudley's articulation.

Jennings' case I have aimed at the cultivation of the nd the communication of elocutionary principles.

Dudley varies her voice mechanically, but Miss Jennings can now associate a feeling with every inflection. The latter also possesse the mysterious power of appreciating relative pitch. Both of these young ladies are apparently totally deaf.

"I was anxious to ascertain how far the power of recognizin musical intervals could be educated, but having more important work to do, I did not make the attempt with these pupils. Mis Fuller, however, permitted me to experiment upon the voice one of her scholars, Miss Isabel Flagg, and I shall exhibit to you to day what I consider a scientific curiosity—perhaps of little practical value—namely, the phenomenon of a deaf person mechanically singing. Miss Flagg will afterwards recite, with elecutionary effect, a little humorous sketch, which we may call 'Thrushevs. Starlings.'

"I shall now write a few exercises on the board for Miss Dudle to read. The sounds will be of such a nature that it would be impossible for her to give them by imitation alone. I shall writ German and French sounds, and some words in the Zulu language containing Hottentot clicks that would defy the imitative power of any one here present."

Mr. Bell then wrote on the board, in the symbols of "visible speech," sentences in English, in German and in French, and some words in the Zulu language containing Hottentot clicks never heard in our speech; all of which Miss Dudley read slowly, but with surprising correctness, and gave the clicks in a way which nobody else present could imitate. She afterwards read from he symbols of "visible speech" the Lord's Prayer, slowly but ver distinctly, with almost faultless articulation, and with apparently deep feeling.

Mr. Bell said that it will require long and patient practice of oral gymnastics before she is able to speak fluently; but he showe enough to prove that the end he is aiming at, perfect and pleasing articulation, is certain.

GEORGE B. EMERSON, JOHN D. PHILBRICK, LEWIS B. MONROE, J. W. CHURCHILL.

Committee.

## EXPENDITURES, 1871.

annual cost to the Commonwealth of supporting a	pupil	in
the Deaf-Mute Schools is as follows:—		
, ,		

an Asyl	um,	•	•	•	•	•	•	•	<b>\$175</b>	UU
Institut	ion,		•		•	•	•	•	250	00
School,	tuiti	on,	reside	nts o	f the	city,	•	•	100	00
sidents,	•	•	•	•	•	•	•	•	<b>1</b> 50	00

nount of the appropriation for the support of pupils during the year 1871, was . . . \$30,000 00 ms paid on this account during the year, were,—

Baldwin Place Home, for board of

ended balance of appropriation, Jan. 1, 1872, . \$2,444 56

## AN ACT RELATING TO DEAF MUTES.

cted, &c., as follows:

now 1. No beneficiary of this Commonwealth in any instituschool for the education of deaf mutes shall be withdrawn om except with the consent of the proper authorities of such ion or school, or of the governor of this Commonwealth.

ION 2. This act shall take effect upon its passage.

Approved May 17, 1871.



# REPORT

OF THE

NERAL AGENT OF THE BOARD.



## AGENT'S REPORT.

Gentlemen of the Board of Education:—

It was my purpose, until a few days since, to confine myself, in my Fifth Annual Report, to a compliance with your vote instruc the Agent of the Board, agreeably to suggestions made by his previous reports, "to prepare a report on the condition of sch houses throughout the State, and also a report presenting p and descriptions of model school-houses suitable for cou towns, &c." I have prepared a partial report, presenting as cisely as seemed desirable the condition of school-houses in all towns of nearly three counties, from information gathered f personal observation, and from other reliable sources, and ca a similar manner go through with all the other counties of State. It will, however, require more of my time, and occ more space in your annual report, than may seem to you exp ent, and yet such a report only can give a full and definite kn edge of the subject. I do not at present submit this partial port, but wait your further instructions as to the expedience completing it. The other report that you instructed me to pare, "presenting plans and descriptions of model school be ings," will be attended with considerable expense for engra and printing the plans to be presented, which, in the absence any appropriation for this purpose, I did not feel authorize assume. When so authorized, such a report can soon be prep for distribution to committees and others needing the informs which it may contain, and also be embodied in my next an report.

My duties during the year have been of the same general of acter as in the four preceding years of my agency, and are so understood by you as not to need a particular statement of the They are briefly defined in the words of the statute to be, visit the several towns and cities for the purpose of inquiring the condition of the schools, conferring with teachers and

lecturing upon subjects connected with education, and in of giving and receiving information upon subjects contith education, in the same manner as the secretary might were present." I have visited about eighty different ccasionally spending two or three days in the same town, extensive area, to visit all the schools, and to meet and citizens, and in several instances have, by invitation, he same town at two or three different times to be present sions of educational interest. I find that with the numerare duties connected with the agency, this is about as many as I can visit during the year with any satisfaction. With the personal statement, I invite your attention to the conton of the following topics.

## TEACHERS' INSTITUTES.

n Institutes have been held during the year at the followces and times:—

at all G. Oat O Swa Ages			No.	regist	ered,	113
way, Norfolk Co, Oct. 9, five days, .			66	**		240
field, Berkshire Co., Oct. 23, five days,	•		40	66		118
Heet. Barnstable Co., Oct. 50, 2.			16	44		55
t Newbury, Essex Co., Nov. 8, three days,			66	4		184
boro', Middlesex Co., Nov. 13, five days,			46	44		138
r, Middlesex Co , Nov. 20, five days, .		-	- 66	44		60
dwich, Barnstable Co., Dec. 4, five days,	*					-
ole number registered,						908

and prospective, and members of school committees, whose and places of residence were registered by me, some of a were present for only a day or two of the session. As has stated in previous reports, the school committees in many are unwilling to allow the teachers employed by them to their schools to attend the Institute for the whole period of days, unless they will make up the time, thinking that the will not justify them in doing so. In the towns where the Inters are held, the schools are, of course, all closed, and the ters in attendance, as otherwise the Institute would not be; but from some of the neighboring towns the teachers come

for only a portion of the time, usually the last two days, and th lose very much of the benefit to be derived from constant atten ance upon the exercises. To meet this serious difficulty, and give increased efficiency to the Institutes, I would renew the re ommendation made once and again in previous reports, that t legislature be requested to pass an Act similar to that of No York and some other States, "which shall provide that the scho committee of any town may, in their discretion, authorize and quire the teachers under their charge to attend any Teachers' stitute which may be held under the sanction of the Board Education in such town, or in any adjacent town, and that, case of such attendance, the time so spent shall not be deduct from the term of service, and shall also be counted, in the retur made to the Board, as actual school time." Much regret is us ally expressed, not only by the teachers, but also by the comm tees themselves, who attend only the closing exercises, and I come fully aware of their character and benefits, that they h not been present during the entire session, and assurances a given that whenever another shall be held within reasonable d tance they will avail themselves of the full benefit of it.

These Institutes were all held for the usual period of five day with the exception of the one in West Newbury, which commenced on Wednesday instead of Monday in consequence of the State election occurring on the preceding Tuesday. The entire series was a very successful one, judging from the opinions those in attendance, which in every instance were expressed in extendance, which in every instance were expressed in invitation to hold another Institute as soon and as often as we deemed it expedient.

As a specimen of the more formal resolutions, I submit the following, which, preceded by remarks of a similar character is some of the leading citizens and friends of education from abroad were unanimously adopted at the close of the first Institute, tone in Medway:—

Resolved, That the present session of the Institute, in its practic teachings and illustrations, has given us in brief both the mod teacher and school, and that the Institutes, as conducted by the present Board, are meeting and supplying the highest needs of those we have the educational charge of our Public Schools; therefore,

Resolved, That we believe it the duty of all school committees a

of education to use all laudable means to secure the early and to attendance of teachers upon this State means of improving cols.

ned, That we, teachers and citizens, who have attended the s of this Institute, express our great obligation to the Board sation and its agents for the opportunity of enjoying its lifementis in this vicinity.

the Institutes by Professors Wm. H. Niles and Lewis B., of the Institute of Technology, Boston; Mr. G. A. Wal-Westfield; Mr. O. H. Bowler, of Boston; the Secretary a Agent of the Board; at five of the Institutes by Mr. of the Salem Normal School; at three by Mr. Boyden, of dgewater Normal School; at one by Mr. Dickinson, of the ld Normal School, and Miss Johnson and Miss Eaton of the gham Normal School; at four by Mr. Walter Smith, Director Art Education. The evening lectures were given by ors Niles and Monroe, the Secretary and the Agent; one by aith, and one by Mr. Philbrick, a member of your Board. The evening lecture given at each Institute by Prof. Mongave readings after the lectures on two other evenings.

the generous hospitality of the citizens in all the towns the Institutes were held, I would express my own hearty and those of my associates, and of all others in attend-All were provided for most liberally and kindly. To the of the several railroads, granting me permission to issue urn tickets to those in attendance upon these Institutes, I renew the expression of my thanks for their prompt and I compliance with my request for such favors. In no case h a request been refused.

aking preliminary arrangements for the Institutes, I have y visited the towns where they were to be held (and sometwo or three such visits to the same place are necessary), an practicable I have also visited several of the adjacent with especial reference to awakening an interest in the subset so secure a better attendance. Such effort is particutes sary in those parts of the State in which Institutes have an held, and their object is not fully understood. I have epared and sent to the school committees in many towns to place where each Institute was to be held circular letters.

explaining the object of the Institute, and requesting that, we the schools were in session, the teachers might be allowed to a them so as to attend the Institute. Posters are also prepared be sent to many towns; each Institute is advertised in seven newspapers; and arrangements are made with railroad office and for the printing of the free return tickets. All these precinary arrangements are in the highest degree essential to the cess of the Institute; but they require much time, and with seven weeks of constant attendance upon the exercises of the stitutes prevent me from accomplishing more in the way of the visitation, school inspection, and other related duties.

#### Admission to Normal Schools.

I have frequently, at your request, attended the examination applicants to enter the Normal Schools,—the three in the eas part of the State,-to represent the Boards of Visitors in deci who should be admitted. I have at such times generally ma very careful and critical examination and analysis of the represented in the papers of the applicants, for each one is requ to present at least four written papers containing answers to printed questions on the subjects in respect to which they examined. I have before me a very full analysis which I n at one of these examinations, and, as I think it is a fair speci of all of them, I ask your attention to a few of its details. O forty-eight examined, seven-eighths lived in Massachusetts, the average age of all was eighteen years and nine mor Twenty-one of the thirty-seven ladies examined were gradu or had been members for some time, of High Schools, fix Academies, and the other eleven of Grammar Schools. Nir these had taught schools for a period varying from twelve w to one hundred and forty-three weeks. I do not find upon paper any minutes with regard to the kinds of schools previous attended by the eleven young men who were examined, or who any of them had ever taught. The questions in geography history, arithmetic and grammar, had been prepared by Principal of the school, and were not above the average of o tions proposed to candidates for admission to our High Sch There were no "catch questions," nor, as is frequently the were there one or two more difficult questions on each subjetest the maximum ability of the applicants. The words for all practical, every-day words. I think you would all th me, that, under the circumstances, there should have average of at least eighty per cent. of correct answers. r, however, had this average, and only eleven had seventy ards. Eighteen had less than sixty per cent. To attain s result, their reading had to be taken into account, for hey were marked much higher than for their written and this gave them a higher average. With this, the average of correctness for all who were examined was per cent.; without it, fifty-nine. Several of these applissed a very satisfactory examination in everything; several most of the subjects, but did not do so well in one or nches, for which there was a satisfactory explanation. ilts in many other cases were not satisfactory, nor creditd yet, following the established precedent of admitting on ow general average of correctness rather than my convicwhat should be done under such circumstances, only four orty-eight were rejected, and seven, somewhat doubtful ere admitted on probation. An examination of the papers applicants shows that in too many instances the writers owed to take up the higher branches of study in High. and Academies before they had thoroughly mastered the elementary branches, which are the corner-stone in a good n.

apers of many were very faulty in respect to the correct anguage, the construction of sentences, the use of capital and spelling. In view of such facts, I cannot repeat too ly, nor emphasize too strongly, the words of Everett in g of the great importance of these elementary branches: are the foundation, and, unless you begin with these, all shy attainments, a little natural philosophy, and a little hilosophy, a little physiology, and a little geology, and all or ologies and osophies, are but ostentatious rubbish." ys a distinguished educator, "to make room for what are the higher studies, it is necessary to remove the so-called t strikes one that the room is hardly worth the making, nout the lower to support them, the higher must be insend the more these are expanded, the larger the plan of erstructure, the larger also, and the more substantial, the foundation."

I have presented this topic thus prominently, and with minuteness of detail, to give emphasis to the recommend that I would make, that a more thorough and exact knowled the common English studies should be required as indispensesessary for admission to our Normal Schools than has herebeen.

I am decidedly of the opinion, too, that it would be wis add a year to the minimum age required for admission, at for the ladies, and not admit any under seventeen years of than to admit them at sixteen, as now required, or conside under sixteen, as occasionally permitted. With a higher star of scholarship for admission, and with greater maturity, phy and mental, of those admitted, I think we should secure a sur class of teachers for graduation, and thus elevate the character our Normal Schools.

#### SCHOOL AGE.

The age at which children may be admitted to and exc from Public Schools is not legally defined, and the subject unfrequently agitated in towns visited by me. In one pl found many of the citizens, for certain local reasons, wishi exclude from school all over fifteen years of age, and asse that they were under no legal obligation to make provision the education of any beyond that age. This impression, wh have found somewhat prevalent elsewhere also, grows out of fact that the number of children between five and fifteen ye age is made the basis for distributing the school fund amon towns in the State, and hence is supposed to define the ag which the people are bound to provide means of education. same statute, however, that makes this limitation of age for apportionment of the school fund, provides that nothing in Act contained shall be considered as prohibiting the attenupon the schools of scholars under five or over fifteen ye age. City Solicitor Healy, whose opinion on this subjec asked by the Boston School Committee in 1859, says:

"This provision was not intended to confer upon scholars five or over fifteen years of age, any right to attend the schools it was intended merely to negative the otherwise possible contion of the statute, that the school committee have not the powthe schools, in their discretion, pupils not between the ages ad fifteen years.

committee, then, may not exclude from the schools persons the ages of five and fifteen years; but they may admit or in their discretion, all persons under five or over fifteen years

e twenty-fourth annual report of the Secretary of the Mr. Boutwell says:—

not to be assumed that the legal rights of children in the are limited to the period when they are between five and ears of age, for it cannot be doubted that youth under twenty-s of age are entitled to the benefits of the Public Schools, mmittees may exercise a discretion in excluding those who physically and intellectually qualified, even though they are an five years of age."

act that twenty-two thousand persons over fifteen years or more than one-tenth of the whole number in average nce upon our schools during the year, enjoyed the advaneducation so liberally provided for them, shows that this tation of the statute is accepted by the great body of the Still, for the reason above given, I have thought it deo present this topic in my report. It is to be regretted, I hat the statute does not absolutely prohibit the admission ren into our Public Schools under five years of age, and ke it a penal offence for parents to send them at an earlier etter still, if children were not permitted to enter the oom under six years of age, until their brain and nervous are better prepared for so severe an ordeal, and then for a two at least not confined there—for what else is it to that tender age, but confinement?—more than half the umber of regular school-hours, each half of the day. say that nearly three thousand children under five years vere in attendance upon the Public Schools of our State the year, and that the greater part of them were compelled he the vitiated air of school-rooms, and to sit quietly on nches, for five and often six hours a day, for five days in k, does it not suggest the necessity of some legal prohibiemedy an evil so deplorable in its consequences, immediate spective?

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#### HIGH SCHOOLS.

During the past year one hundred and seventy-nine High Sch have been maintained in one hundred and sixty-five cities I have visited within a few years very many of these, have found quite a number of them not what might be expe from the name. Still, even in the poorest of them, with all t deficiencies of apparatus, books of reference, and other thing which I have spoken in previous reports, greater advantages f higher education are presented than could be furnished by other schools in the same towns. I have spoken of these "High" Schools because they are popularly so called; but statutes relating to them nowhere so designate them. They town schools " for the benefit of all the inhabitants of the tor in distinction from district schools, which are for the benef districts only. Many a town school has been defeated becau had the misfortune to be called a high school. As these sch are open to all, they are, as Mr. Mann once said, "emphatic the poor man's school."

So highly are these advantages appreciated, that in many stances pupils living at remote distances from the school will of come every obstacle that interferes to prevent their availing the selves of them. To attend the High School which was kept six months in one of the small country towns, having a popular of less than twelve hundred, one young man daily walked miles, and during the six months was absent but once. In other instance, a young man and his sister, living four miles in the High School, walked that distance morning and evening sunshine and in storm, for three years, and after completing course of study, went to one of our Normal Schools, and are ranked among the successful teachers of our Public School Numerous facts of a somewhat similar character have commy knowledge.

Many of these schools in the cities and large towns are vided with large, convenient, beautiful, and in some cases costly buildings, furnished with all needful appliances, and affing the means of acquiring, without expense to the pupil, an cation more extensive and complete than can be acquired in many of the so-styled Colleges of our country. The Principa many of these schools are thoroughly educated, and not use

receive quite liberal salaries. Five have \$4,000 each; 3,250; two, \$3,000; five, \$2,500; two, \$2,400; three, ; and forty others from \$2,000 to \$1,500. I am frequently to attend the graduating exercises of these schools, as those of lower grades, and it is pleasant to see the increasor with which so many of them are regarded by the more ent portion of the citizens. Their influence, when they ely and liberally supported, is incalculable. From them lleges receive their largest, and often their best, supplies. ly do the High Schools in our large cities give a thorough ation for College to all who desire it, but in some of the towns similar advantages are enjoyed. I might name uch, but will select from my notes facts relating to one or ly of those visited by me during the year. From the High of Woburn, a town having a population of less than nine nd, twenty graduated last June, five of whom were going to . Including these five, there were twenty-eight members school studying with reference to a collegiate education. thers who were fitted at this school were at that time in nt Colleges. At the Fitchburg High School there were last summer who were studying to enter the Sophomore a College, and several others are now members of College at same town.

e of the High Schools in the vicinity of Boston do not send by to College as they would if so many boys living in the pring towns were not permitted to attend the Boston Latin without (until, perhaps, quite recently) being required to ything for their tuition there. At my last visit to this less than a year since, there were forty such boys belongit. It is very kind and liberal for Boston thus to throw a schools for the gratuitous instruction of those who have m upon it, and for whom provision is, or would be, made ere; but the schools from which these boys are withdrawn, om the proper maintenance of which the interest of their is also withdrawn, must, as they do, suffer very much in mence.

e is one peculiarity in the management of the Woburn school which, for several reasons, is worthy of special contion. The "half-day system," which has been in operation or several years, requires the attendance of the pupil but

one-half of each day, provided he has faithfully performed duties. It is thought that this system has a good influence up the character of the pupil, as it increases his self-reliance, a cultivates a feeling of responsibility; upon his health, also, during the time in which he is preparing his lessons he escapes necessary restraint of the school-room and its vitiated atmosphere and upon his mind, as undisturbed by the distracting influences t are unavoidable in a large school, he can accomplish much me in the same time, and with much more satisfaction. It is economical arrangement, also. Says the Superintendent: "T present High School-house was intended to accommodate nine With this system it will accommodate just tw that number." (One half attending in the morning, and other half in the afternoon) "Hence it is to-day saving an penditure of from twenty to thirty thousand dollars in the er tion of a new High School building."

The results of this system are so entirely satisfactory to all p ties interested, and its advantages so obvious, that I would comend it for adoption in those towns whose citizens are not p pared to incur the expense of erecting new High School buildin or of enlarging existing ones, to accommodate the increase number of pupils prepared to enter upon the High School cour of study.

#### COMMON SCHOOL STUDIES.

There is an opinion very prevalent among educators that whour schools are doing a great and noble work, they are not accorplishing all that might reasonably be expected of them, and that opinion I am constrained to concur. In very many schoot that I visit, I am pained to witness the attempt to memorize the endless and senseless details of geography and of history, technicalities of grammar, at an age when they cannot be und stood, and long examples in mental arithmetic, which with the complicated solutions must be given with closed book, and in process, logical terms. If a portion of the time thus wasted, a worse than wasted, could be given to some studies that wor really interest the children, develop their perceptive power accustom them to the correct use of language, and be of repractical value to them in after life, how much more satisfactor results would be exhibited at the close of the child's school life.

le has well expressed the feeling of regret which is very ly entertained by those whose early education was similar deficiencies to his. "For many years," he says, "it has ne of my constant regrets that no school master of mine knowledge of natural history so far, at least, as to have me the grasses that grow by the wayside, and the little and wingless neighbors that are continually meeting me salutation I cannot answer, as things are. Why didn't ly teach me the constellations, too, and make me at home starry heavens which are always overhead, and which I alf know to this day?" With teachers properly trained r work, with better methods and a more systematic order ning, with a judicious elimination of all that is useless or real value from some of the studies now occupying an proportion of time, with a regular and progressive course es, pursued in a natural and logical order, and adapted to essive ages of pupils, and with a proper economy of time, y can all the present subjects of study in our schools be with more satisfactory results than at present, but very nore can be accomplished within the same period of school I thus shall we better meet the reasonable demands of the

subject is an interesting and important one, but the further on of it, in a brief report like this, cannot be pursued. ent introduction of Hooker's admirable "Child's Book of" into the Grammar Schools of Boston, Cambridge, Worcesseveral other cities and towns, seems to me a step in the rection towards a "consummation devoutly to be wished" ect to an improved course of studies for our Common, to which I must so briefly allude.

to educate our children, and secure the best results with stest economy of time and expense, is the great problem of , and demands the best thoughts of all our educators. very far from having perfected our school system, which, many excellences, has also many obvious imperfections; le we should avoid the beautiful but impracticable theowould-be reformers, we should be ready to adopt and encon our system any and every suggestion that will tend to it more perfect, let it come from what source it may. Il, in imitation of our fathers, to whom we are indebted

for the inception and establishment of this noble system, should, in all our efforts to improve it, humbly and constant seek for that divine guidance and wisdom without which all man endeavors must prove ineffectual.

ABNER J. PHIPPS, General Agent

Boston, January, 1872.



THIRTY-FIFTH ANNUAL REPORT

ECRETARY OF THE BOARD.

## SECRETARY'S REPORT.

#### Gentlemen of the Board of Education:—

I respectfully present for your consideration my Eleventh Annual Report as your Secretary, and invite your attention to the suggestions which I deem it advisable to make upon a few of the topics which have engaged my attention during the past year Before entering upon these, I present the usual

SUMMARY OF STATISTICS FOR 1870-71.	
Number of cities and towns,	34
All have made returns except Chelsea, and three towns newly	
incorporated—Ayer, Gay Head and Maynard.	
Number of Public Schools,	5,0
Increase for the year,	
Number of persons in the State between five and fifteen years of	
age, May 1, 1870,	278,24
Increase for the year, 7,197	
Number of scholars of all ages in all the Public Schools during	
the year,	273,60
Increase for the year, *26,581	
Average attendance in all the Public Schools during the year, .	201,7
Increase for the year, 2,037	
Ratio of average attendance for the year to the whole number of	
persons between five and fifteen, expressed in decimals,	.7
Number of children under five attending Public Schools,	2,71
Decrease for the year,	
Number of persons over fifteen attending Public Schools,	21,97
Decrease for the year,	
-	

The number too large, through incorrect returns of school committees. They were requested former years to return the whole number of different scholars attending school in Summer, also Winter, in separate statements; but in the last Blank Form of Inquiries they were desired, according the universal practice in other States, to return the whole number of different scholars during t school-year, in one amount, without distinction of seasons or terms. The result was that in soc towns the whole number of different scholars in one term was added to the whole number in the second perhaps third term, thus returning a number too large, by counting the same scholar more the once, for the year. This mistake was perceived, and there was much correspondence to correct it; be in many cases it was difficult to detect the error with certainty, or ascertain the extent of it, and que impracticable fully to correct it. Hence the return of an increase which is too large.

of different persons employed as teachers of Public	
ls during the year; males, 1,049; females, 7,186; total,	8,235
Decrease of males, 9; increase of females, 138; total	
increase,	
	months 9 days.
Increase for the year, 3 days.	•
wages of male teachers (including High School teach-	
er month,	<b>\$</b> 76 44
wages of female teachers per month,	31 67
raised by taxes for the support of Public Schools, includ-	
ly wages, fuel, care of fires and school-rooms,	8,272,335 3 <b>3</b>
Increase for the year,	
of funds appropriated for Public Schools at the option of	
wn, as surplus revenue and dog tax,	6,240 68
ry contributions to prolong Public Schools, or to purchase	•
atus, etc.,	12,540 26
Decrease for the year,	•
of local school funds, the income of which can be ap-	
ated only for the support of schools and academies,	1,167,173 27
of the local school funds appropriated for schools and	· •
mies,	75,808 48
of the State School Fund paid to the cities and towns in	·
the Public Schools for the school-year 1870-71,	107,306 62
paid for superintendence of schools by school commit-	•
and for printing school reports,	83,060 96
of salaries paid to superintendents of Public Schools, .	39,026 50
te returned as expended on Public Schools alone, ex-	•
e of expense of repairing and erecting school-houses, and	
ool books,	3,520,510 85
Increase for the year, , . \$215,593 13	, ,
sed by taxes (including income of surplus revenue and	
nilar funds, \$6,240.68,) exclusive of taxes for school edi-	
and superintendence, for the education of each child in	
tate between 5 and 15 years of age—per child,	11.78.3
Increase for the year, \$0.23.4	
age of the valuation of 1865 appropriated for Public	•
ols, including only wages of teachers, fuel, and care of fires	
chool-rooms (3 mills and 25 hundredths,)	0.008-25
Increase for the year,	
towns in the State have raised by tax the amount re-	
d by law, (\$3 for each person between five and fifteen),	
condition of receiving a share of the income of the State	
ol Fund, except Gay Head,	
of High Schools returned as such in towns not required	
w to maintain them,	39
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e last annual report, page 104, it was incorrectly stated that there was a decrease in the numchers from 1859-60 to 1869-70 ; there was an increase of 866 in ten years.

	•
Number of High Schools in towns and cities having 500 families	
and required by law to maintain such schools,	
Only three towns required by law failed to maintain a	
High School.	
Evening Schools—number, 51; average attendance, 8,479; expense, \$36,760.65.	
Schools in State Charitable and Reformatory Institutions-num-	
ber, 20; teachers, 30; number of different pupils, 1,531; av-	
erage attendance, 898; number between five and fifteen, 573;	
number over fifteen, 413; expense, \$9,576.40.	
Number of incorporated Academies returned,	
Average number of scholars,	
Increase for the year,	
Amount paid for tuition,	<b>\$</b> 115,13
Increase for the year,	j
Number of Private Schools and Academies,	
Decrease for the year,	
Estimated average attendance,	1
Decrease for the year, 1,473	
Estimated amount of tuition paid,	<b>\$</b> 106,43
Decrease for the year, \$73,248 33	
Amount expended in 1870 for erecting school-houses,	1,712,07
Increase for the year, \$258,766 83	
Amount expended for repairing school-houses,	846,77
Increase for the year, \$31,367 59	
Total expended for school-houses in 1870,	2,058,85
Amount of taxes paid to maintain Public Schools alone, exclu-	
sive of cost of school books,—for wages, fuel, care of fires and	
school-rooms, repairing and erecting school-houses, supervising	
schools, printing school reports, providing apparatus, instruc-	
tion of children in reformatory institutions and almshouses, .	5,462,85
—or for each person in the State between five and fifteen years	
of age,	1
—or for each man, woman and child in the State,	•
-or a percentage on the valuation of 1865 of over	5
Amount paid for popular instruction of children and youth in the	
State, derived from taxes, voluntary contributions, income of	
funds, tuition in Private Schools and Academies, exclusive of	
what is expended for collegiate and professional education and	
for school books,	6,297,01
—or for each person between five and fifteen years of age,	2
—or for each person of the entire population,	6
or a percentage on the variation of 1000 of over	0

#### DEAF MUTE EDUCATION.

bedience to the requirement of the statute there will be in connection with the report of the Board the full report Clarke Institution; the fifty-fifth report of the Directors of herican Asylum, relating principally to the lamented death c. Collins Stone, the late accomplished Principal, with a from the first annual report of the present Principal, and mes of the pupils supported by the Commonwealth in the in; and a report of the chairman of the committee having of the Boston School for Deaf Mutes, with the names of the therein who are aided by the State.

owing these reports will be found a statement of the sums om the State treasury to each of the schools for the year January 1, 1872.

ing the last year application was made for the admission to nerican Asylum of two young men nearly twenty years old, and been suffered to grow up in ignorance to that period of one of our most populous towns, and in the immediate or hood of a large city. I am impelled by witnessing such to renewedly urge upon the school committees and all others are interested in the welfare of the communities where they and of the whole Commonwealth, the exercise of such ce as shall gather all of this class of pupils into the schools and to receive them. The Commonwealth is desirous of furgall needed assistance to accomplish this most desirable end; is deeply to be regretted that any should fail of receiving an ion through indifference or neglect on the part of friends soil officers.

#### TEACHERS' INSTITUTES.

on Institutes were held during the autumn, one of which, ing on the week of the annual election was continued three. The remaining six were continued the usual number of In each, twenty-seven teaching exercises were given by ad five evening lectures, most of them being accompanied torical exercises given by Professor Monroe. The Institutes held in the following towns and counties: in Pittsfield, hire County; Sandwich and Wellfleet in Barnstable

County; West Newbury in Essex County; Ayer and Marlbor in Middlesex County; Medway in Norfolk County.

Most of these were marked by an unusually large attend of intelligent teachers, earnest in their endeavors to secure highest possible aid from the instructions and counsels of them, and the evening lectures were listened to by croaudiences, thus evincing the deep interest which everywhere vades the minds of our population in the cause of public ed tion.

I respectfully refer to the valuable report of Mr. Phipps General Agent of the Board, for a more full account of the tutes, to whose unwearied and judicious efforts their success a large degree owing.

So long as the ancient custom generally prevailed of div the school year into two terms, held in midsummer and winter, it was possible so to arrange the times of holding Institutes as to cause but little interference with the schools in actual session. Now, however, that a more rational division the school-year by which three terms instead of two are held, extensively prevails, the Institutes must be generally held de term time; and school committees are very often embarrassed the question as to the propriety of allowing the teachers to a the Institutes in term time. This is more especially the car those towns where no more money is raised than is sufficient continue the schools for the bare time required by the stat It thus not unfrequently happens that those teachers who need the instructions which the Institutes give, and who are desirous of availing themselves of them, are cut off from the lege.

In several of the States,—New York, for instance, where I tutes are annually held in each county,—the Common Stachers are required by law to attend them, as one of the ctions of receiving a certificate of qualification to teach.

While I would not care to introduce this feature into our system until other important modifications are made, but re to leave the attendance upon the Institutes to the good sense voluntary action of school committees and teachers, I we remove, so far as possible, the obstacles in the way of such act I therefore recommend, that the legislature be requested to an Act which shall give the school committee of any town

by to allow the teachers in their employ to close their schools end upon any Institute held in term time, and in their to the Secretary of the Board to make no deductions for a thus employed.

#### NORMAL SCHOOLS.

e most important institutions have been conducted during year with all their accustomed faithfulness and success on of both teachers and pupils. In each of the schools a number have entered upon the advanced course of study ch provision has been made by the Board. In two of bols, many during the first year have determined to the full course of four years, and their studies are arranged ference to that, while in the others the advanced class is p of those who have graduated, and in many instances on engaged in teaching. Experience only will prove which methods will secure the most satisfactory results.

nost notable events of the year have been the completion nlargements of the school buildings at Salem and Bridgend the preliminary steps taken for the establishment of ormal School at Worcester.

rork of enlarging and remodeling the Salem building was at the close of the summer term of 1870, and completed at the of the corresponding term of 1871. Meanwhile the ras kindly allowed by the city authorities to occupy that of the adjoining building which had been occupied by the hool. As remodeled, the Normal School building is amply d with rooms for recitations, lectures, cabinets of natural and fine library and reading room. There is also a beautiful bom, with ample space for seating two hundred pupils. Iding is one of fine proportions, and admirably adapted to sees, worthy alike of the Commonwealth and of the ancient are it is situated, which has contributed liberally towards for and enlargement. The cost of the recent improvessides the land which was given by the city of Salem, has 5,573.75.

e 12th of May last an appropriation of \$15,000 was made egislature for "the enlargement and reconstruction of the School building at Bridgewater and for furnishing the Plans were procured and contracts made, so that the

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work was commenced at the close of the summer term. By ing a single week to the summer vacation of eight weeks, deducting the time from the winter vacation, the work was pleted without any loss of time to the school. The enlarger consists mainly in giving an additional story to the buildin raising the roof. In this story the large hall is constructed room for study and general exercises; while commodious pleasant recitation, lecture and library rooms are finished in other stories, and the whole building is furnished with effective apparatus for heating and ventilation.

The alterations were skilfully planned and executed at a not exceeding the appropriation, and the completed building altogether a commodious and satisfactory one.

It is but just to say, with respect to both the Salem and Bridgewater buildings, that great credit is due to Mr. Hagan Mr. Boyden for devising and procuring the admirable plant the work at these several schools, and for assiduously overse the execution of them.

The plan, which has been long entertained and steadily sued, of enlarging the capacity of the Normal Schools, so enable them better to supply the wants of the community now been completed so far as the school buildings are concerned in the season of the legislature to respond to the urgent requested of the Board and furnish the means of cheaper boarding, and books, apparatus and other appliances as are indispensable thorough teaching in order that these schools may continue the what they were designed by their enlightened founders the most powerful and beneficent agencies in our educational system.

On this subject I beg leave to refer to the opinions express my last report, with the single remark, that every day's o vation and experience in the great service to which you called me, have served only to deepen and strengthen my s of the importance of the convictions there expressed.

## NEW NORMAL SCHOOL.

In their report for 1869, the Board recommended the elishment of a new Normal School in the county of Words. The recommendation was renewed in the report for 1870, response to these, and to petitions from several towns in county, the legislature, at the last session, passed the followes resolves:—

Снар. 79.

RESOLVES to establish a Normal School in Worcester.

deed, That the board of education are hereby authorized equired to establish a state normal school in the city of oter, and that the sum of sixty thousand dollars is hereby riated to defray the expenses of erecting a suitable building mishing the necessary appurtenances and apparatus for said and that the same be expended under the direction of the of education, upon whose requisition the governor is hereby zed to draw his warrant for the amount aforesaid to be paid he school fund: provided, that the deficit of income of the fund occasioned by such payment shall be deducted from the of the income of said fund applicable to educational purposes, manner as not to affect the amount to be apportioned and disd for the support of public schools.

lved, That the trustees of the Worcester Lunatic Hospital are authorized and required to convey to the board of education successors, in trust for the Commonwealth, a tract of land sitn said city of Worcester of not more than five acres, to be by the governor and council, east of a line drawn one hundred venty feet east of the easterly line of Mulberry Street, and of a line drawn five hundred feet south of the southerly line of the Street, when extended east as proposed; and west of the y line of Wilmot Street, when extended southerly as proposed; aveyance of said land to include a right of way thereto from tentral Street, the location whereof shall be determined and by the governor and council, if, in their opinion, said right of necessary and desirable.

lved, That the city of Worcester is hereby authorized to lay a extend Prospect Street, from its present easterly terminus to resection with the proposed line of the prolongation of Wilmot also to extend Wilmot Street southerly to the proposed interwith the extension of Prospect Street, and from that point rely to East Central Street.

vived, That the value of said land shall be determined and y the governor and council, and the amount shall be credited treasurer of the Commonwealth to the fund created by the ons of section four of chapter two hundred and thirty-eight of so of the year eighteen hundred and seventy.

olved, That the city council of the city of Worcester may raise ation or otherwise, the sum of fifteen thousand dollars, and may a same to the board of education for the purposes named in these as: provided, that these resolves shall not take effect until the Worcester or the inhabitants thereof shall have paid to the

board of education the sum of fifteen thousand dollars to aid i erection and furnishing of the building for said school. [App May 26, 1871.

The city of Worcester having complied with the condition quired in said resolves, the governor and council proceeded is month of September to locate five acres of land, including a of way thereto of one hundred feet in width, and to deter the value of the land which was fixed at \$25,000 to be credit the Commonwealth to the Worcester Lunatic Hospital Fund the proper conveyances of the land thereupon were made by trustees of the Hospital.

At the quarterly meeting on the first Wednesday of Oct the Board appointed a Building Committee consisting of McChapin, Rice, Philbrick and the Secretary, with instruction procure suitable plans for a building, and power to employ architect. A. R. Esty, Esq, of Framingham, an architect of known ability, and having much experience in the construction of public buildings, and who had constructed the Normal Schuilding and boarding-house at Framingham, was employed prepare, for the consideration of the Board, a plan for a build with proper accommodations for a school of two hundred pupils.

The plan devised by Mr. Esty proving eminently satisfact both to the committee and the Board, the committee were autized to cause full specifications to be made, and to place the under contract. I am happy to say that this has been of Skilful and responsible parties have entered into contract to struct the edifice at prices which will bring the cost of the bing and the furnishing of it within the means placed at the posal of the Board.

The material will be stone taken from a neighboring qu with facings of Concord granite, and it is expected that the bing will be completed and ready for the fifth Normal School o Commonwealth, at the opening of the fall term of 1873.

It is a matter of sincere congratulation not only by the Be but also by the friends of Public Schools throughout the Comwealth, that this important step has been taken—the first after interval of eighteen years since the establishment of the School—and that the new school is to have a home city so central, so accessible by numerous railways, and so di

for the enlightened zeal and munificence ever displayed itizens in behalf of its Public Schools. Nor can I doubt a wise policy, first adopted in this country by Massa, of providing, at the public expense, for the thorough and training of the teachers of her Public Schools, now iciously revived, will not be suffered again to slumber so ad that other schools of a like character will be freely ned, as the wants of the Public Schools and of particular is shall demand.

oin a statement of the cost of the several Normal School d buildings, with fixtures, &c., and their present value by on.

#### Framingham Normal School-House.

•		. 8	<b>\$11,000</b>	00		
n,			2,500	00		
r Rail	road,	. •	2,000	00		
				—	<b>\$</b> 15,500	00
•	•	. 8				
nd,	•	•	1,200	00		
					13,633	00
				•	\$29,133	00
and,		. :	<b>\$</b> 26,500	00		
•		•	4,654	00		
					31,154	00
						_
hool-b	ouse	and	boardi	ng-		
hool-l res,	ouse	and	boardi	ng-	\$60,287	00
	ouse •	and.	boardi 	ng-	<b>\$</b> 60,287	00
res,	ouse	and	boardi	•	<b>\$60,287</b>	00
res, 1e :	ouse ·	and .	• •	00	<b>\$60,287</b>	00
res,	ouse	and .	<b>. . . . . . . . .</b>	00 00	<b>\$</b> 60,287	00
res, 1e :	·	and .	<b>\$6,000 25,000</b>	00 00 00	<b>\$</b> 60,287	00
	n, r Rail nd,	n, . r Railroad, 	n, r Railroad,	n, 2,500 r Railroad,	n, 2,500 00 r Railroad, . 2,000 00 \$12,433 00 nd,	n, 2,500 00 r Railroad,

dition to the contributions of \$4,500 by the town and railwards the first cost of the school building, the lot upon

Total,

which it stands, comprising four and three-fourths acres of able land was given by public-spirited individuals.

		V	Vestfiel	ld S	chool .	Buil	ding.		
First cost of	build	ling a	nd lot	. 184	46,				<b>\$11,</b> 5
First alterati			•				\$5,000	00	•
Second alter						•	6,000		
Third alterat						69,	15,000		
Fencing, etc.			•		•	•	2,000	00	
-									\$28,0
Apparatus,	_	_			, <b>`</b>	_	<b>\$1,000</b>	00	
Eurniture,	•	•	•			•	2,000		
D WILLIAM C,	•	•	•	•	•	•	2,000		3,0
							-	_	
Total,	•	•	•	•	•	•		•	<b>\$42,</b> 5
Fatim	hote	~~~~	val						
		-	nt val				<b>\$10,000</b>	00	
School buildi			tures		•	•	45,000		
Apparatus,						•	1,000		
Cabinets and						•	3,500		
Caninere end	, HD1a	iry,	•	•	•	•	<b>0,00</b> 0	υυ	\$59,5
at \$3,500, h		В	B <i>ridge</i> ilding	water	r Scho		•		
1846-7. Paid							<b>\$3,750</b>	00	
	•		wn and			als.	2,600		
	-,	•	•				=-,-		\$6,8
Addit	ions:	:							
1861. Approp	p <b>riati</b>	on, w	ings a	dded	ı, .		<b>\$4,5</b> 00	00	
1871. Appro							15,000		
Fixtur							1,000		
									20,
Total.									-
I Ulai,	•	•	•	•	•	•	• •	•	<b>\$26</b> ,
Board	ing-h	ouse	:						
1869-70. Loa	ns fro	m th	e scho	ol fu	nd,		<b>\$26,500</b>	00	
Indi	ividus	als, fo	r ciste	ern, f	tank,	etc.,	500		
		•		•	-	•			27,

						•			
Estimated	prese	nt val	ue:			<b>A1</b> F00			
	•	•	•	•	•	<b>\$1,500</b>			
-house, .	•	•	•	•	•	30,000			
atus, .	•	•	•	•	•	1,300			
y and cabir	ıets,	•	•	•	•	2,750	00.		
					•			<b>\$</b> 85,550	
ng-house,	ixture	s and	furni	ture,	•	• •	•	27,000	00
otal, .	•		•	•	•		•	<b>\$</b> 62,550	00
vious to th	e ere	ction	of th	e sch	ool-	house in	1846	3-7. the to	wn
dgewater									
or the use									
l, in the									
hool, the s				s an	u in	Casii ioi	. 6114	sauppor	ı oı
,		•		0.1.	-1 T				
First cost:		n Ivo	mai	ocno	OL JO	uilding.			
						<b>A</b> C 000			
Paid by the			•	•	•	<b>\$6,000</b>			
Easter		•	•	•	•	2,000			
City o	f Sale	em,	•	•	•	5,500	00	<b>41</b> 9 500	00
ty gave als	o the l	and,	value	d at				<b>\$13,500 5,000</b>	
-4-1								<b>\$18,500</b>	•
otal, .	•	•		•	•	• •	•	<b>419,000</b>	w
Appropriat	ion fo	r furn	ishing	z, etc		<b>\$2,000</b>	00		
Appropriat					٠.	1,000			
Individual						1,000			
	6		,	•	•			4,000	00
1. Appropr	iation	for er	large	ment		\$25,000	00		
Land giv						1,000			
B1.	011 NJ		_,	,	•			26,000	00
f fixtures, s	ınd fu	rnitur	e and	appa	ratu	8,	•	2,700	
otal, .							•	\$51,200	00
Estimated	preser	at val	ue:						
ng,		•	•			<b>\$50,000</b>	00		
	•			•		6,000			
and other fi	xtures		-			1,000			
atus, .		· ·	•	•	•	500			
t of Natur		· ·	•	•	•	500			
			.1-	•	•	7,000			
y, general a	ma te	Z (-DOC	)K,	•	•	7,000	UU	<b>\$</b> 65,000	ΔΛ
	• •							<b>Φ</b> υυ,υυυ	vv

In stating the *cost* of the school property, no account has taken of cabinets and libraries, from the fact that they have collected with little or no expense to the Commonwealth. books are largely gifts from individuals; the specimens of I ral History are in like manner gifts to the schools, or have collected by the teachers and pupils.

No separate statement has been made of the cost of furn inasmuch as it is more frequently than otherwise included cost of the buildings.

#### SUPERVISION OF SCHOOLS.

Our system of supervision by a committee, more or less n ous, chosen by the town, is an outgrowth of the ancient and ho custom of committing the conduct of general town affairs analogous body known as selectmen. In some of the other S as in New York, for instance, the general town affairs are given a single officer known as supervisor, and in like manner the se are under the supervision of one person. In that State method of supervision is regarded as greatly superior to that divides responsibility among a considerable number, so that little responsibility is felt by anybody. Looking at them abstract, doubtless each system will be seen to have its pe advantages; but practically that will be the best which most i conforms to the habits of the people. Hence our own system not very soon be changed. Moreover, the laws of 1854 and which authorize any city or town to require its school comm to appoint a superintendent, furnish the means of securin advantages of both systems, that of a larger body for counse of a single person for details. I need not repeat the re which I have heretofore urged in favor of employing a ca tent superintendent to have the immediate oversight of schools of town or city. I am happy to learn from the a reports that the practice is gradually finding favor. I herewith a list of between forty and fifty towns in which an officer is employed, as appears by the latest reports rec at this office. In most cases the office has become a perm one, with a respectable salary, and commands the service men of large experience and eminent ability. In many one member of the school committee who has aptitude fo work and leisure, is intrusted with the entire active e committee, often performing them for small compen-. In the case of contiguous towns, where the proper remuon of a superintendent would be a serious burden on a single a recent law provides that the towns may unite in the ement of such an officer. I commend this law to the contion of the towns in which the desire is felt for a more igh supervision of their schools than that by an ordinary ittee.

ew years since I was gratified to notice the election of a n as a member of the school committee of one of our rural . Soon a bill was reported in the house of representatives rizing the election of females on the school committee. as defeated on the ground that the law was unnecessary, uch as the towns had full power under existing laws.

ce then the number of such elections has quite rapidly sed; and it may interest some to learn that, in two of the named below, the schools are under the supervision of 28.

eed not spend time in enumerating the reasons which might posed to have dictated such a course.

e fact that seven-eighths of our Public Schools are taught by es, and that in many of our towns there are far larger numbers cated females than males, ladies who have graduated at the al School or Academy, and have spent many years in teaching, nothing of tact, and sympathy, and the necessary leisure d by many, are reasons sufficient for the movement, which, ot not, will continue till, both as members of committees superintendents, women will exert an influence alike powerd beneficent.

ons which are reported as employing Superintendents of ls:—

Blandford. Stow. Holyoke. Woburn. cetown. eld. Springfield. Canton. ld. Amherst. Dover. Northampton. Kingston. net. Marion. iver. Acton. Arlington. Plymouth. eld. Bedford. Ashby. Scituate. ea.

Boxborough. West Bridgewater.

Taunton. Cambridge. Boston. Charlestown. Athol. Beverly. Chelmsford. Douglas. Gloucester. Holden. Lawrence. Concord. Mendon. Lowell. Salem. Newton. Worcester. Tepsfield.

Hawley. Somerville.

## SPECIAL AGENTS.

At the last session the legislature at the request of the Boar made an appropriation from the income of the school fund of sum not exceeding ten thousand dollars, in addition to the amoun appropriated for the salary of Mr. Phipps, the General Agent, the expended for the salaries and expenses of such special agent as the Board might employ.

The object of this appropriation was twofold:-

First, to enable the Board to secure if practicable the services of some competent agent to give aid and direction in a more system atic and thorough course of Art instruction in the Normal Schools to visit the cities and towns required by the law of 1870 to mai tain classes for the instruction in mechanical drawing; to give information and assistance to school committees in the formation of such classes, and the arrangement of suitable courses of instruction in them; and, lastly, to devise and aid in giving effect some practical method for the education of teachers in drawin who shall be capable of giving instruction in the special school and also in the Common Schools.

The second object was the employment of such a number competent persons as the appropriation would allow, to act visiting agents within certain districts to be designated, who show perform the service in their respective districts which is performed by the General Agent, with the intent of so supplementing his labor that all the towns in the Commonwealth should be visited by authorized agent of the Board at least once annually, who being located within their respective districts should be able to answer promptly special calls for advice and assistance whenever made it was hoped in this way to make some approach towards or provide a substitute for that more intimate and thorough system inspection and supervision which prevails in most of the States the Union in the form of county superintendents, occupying

those States an intermediate position between that of the State superintendent and the town superintendent or committee.

Having in a former report expressed the opinion that some system of intermediate supervision, either that of county superintendents or district agents, is indispensable to the successful working of our school system, I need not repeat what I then said, and will only remark further, that I regarded the extra appropriation with deep interest as a first step in the road of progress in the right direction.

The fact appearing, however, that other appropriations would nearly absorb that portion of the income of the school fund to which all were charged, it was not judged wise to attempt much in this direction. Late in the year, a single agent, Geo. A. Walton, Esq., was employed to visit the towns west of the Connecticut River during the winter months, his engagement terminating on the first of April. Mr. Walton commenced his labors soon after the Teachers' Institute in December, and has been actively and successfully engaged in his new field.

With regard to the first mentioned object for which the appropriation was asked, more has been accomplished.

Early in the year the sub-committee to whom the school committee of Boston had committed the subject of Art Education, opened a correspondence with gentlemen in England, with the object of procuring a gentleman having the requisite qualifications to organize classes and conduct the department of Drawing in the Boston schools, on the same general plan that music is so successfully taught in them.

The correspondence resulted in an invitation to Walter Smith, Esq., the head master of the School of Art in Leeds, to accept the position. In June last Mr. Smith visited this country with the view of examining the ground personally before deciding the question of removal. Mr. Smith brought the most ample proofs, not only of distinguished ability as an educator in his favorite department, but also, of having been equally distinguished for his skilful and successful endeavors in organizing schools of art in numerous cities in England, a branch of service second in importance to no other with us.

After a full conference with Mr. Smith by the executive committee of the Board, in which he fully explained his views as to the best methods of organizing and carrying forward the work in

hand, the committee were satisfied of the expediency of procuri his services for the Commonwealth for such portion of his time should be agreed upon with the Boston committee.

The agreement was made, subject to the approval of the Boa to pay two-fifths of Mr. Smith's salary, and his actual travel expenses, for a like proportion of his time to be spent in the svice of the Commonwealth.

Having accepted the joint service thus tendered to him, I Smith returned to England and made immediate dispositions his final departure. He was also charged with the duty of p curing such models of art, drawings, casts, etc., as would needed for use in his visits to the cities and towns, and in Normal Schools. For this purpose he was authorized to experive hundred dollars, which was appropriated by the Board from the income of the Todd Fund.

Having procured by purchase, and by the gift of general friends of art culture in England, a valuable collection of mode etc., suited to his purpose, Mr. Smith returned to Massachuse early in the autumn and commenced his work. He gave intesting lectures and teaching exercises in the Teachers' Institute and has since been engaged in visiting and giving instruction those cities and towns required by the statute of 1870 to matain adult classes in mechanical drawing. In this service he greatly aided by the collection of models above named. The have been labelled and catalogued, and, to secure safety and opatch in their transportation and arrangement for use, are place under the charge of a curator, who is a competent teacher drawing, and in this way also does good service in supplement the labors of Mr. Smith.

At the annual meeting of the Massachusetts Teachers' Association in October last, Mr. Smith delivered a very interesting a valuable address on "Art Education, and the teaching of Draing in the Public Schools." This address was listened to w profound interest by a large body of the leading teach from every section of the Commonwealth, and was published the "Massachusetts Teacher" for November. It has also be printed by the Board in pamphlet form, and with it two valua papers by Prof. Thompson, which were printed by the Board 1870.

In November a circular was issued by the Secretary of

Board, and sent to the school committee of each town and city in the Commonwealth, announcing the entrance of Mr. Smith upon his duties as State Director of Art Education and giving information as to his methods of procedure, and the means of securing his personal aid and advice in all matters pertaining to his department.

This address and circular will be found in the Appendix to this Report, to which reference is respectfully invited.

It has given me great pleasure to learn that the teaching exercises and more popular lectures of the Art Director are everywhere received with a high degree of approbation. New interest is awakened and large numbers are flocking to the classes wherever they are established. Flourishing classes have been formed in all but two or three of the towns and cities which are required by law to establish them. The chief obstacle in the way of forming these classes lies in the difficulty of procuring competent teachers. So fast as this obstacle can be removed I see no good reason why the law should not be extended in its scope so as to embrace all our towns having more than five thousand inhabitants. In addition to the work already alluded to, the "objective point" of the efforts of the Board and of the Art Director will doubtless be the preparation, as rapidly as possible, of competent teachers, both for the Public Schools and for special classes. To this end it will be the duty of Mr. Smith, as soon as he can be released from the more immediate calls of the towns while the evening classes are in session, to spend as much effort as possible in the Normal Schools, with the view of giving the utmost efficiency to the instruction in drawing given in them; for on these schools we must mainly rely for efficient aid in its general introduction as a branch of study into the Common Schools.

Something can be done, as heretofore, in the Teachers' Institutes. Still more, however, might be expected from special normal classes, to be opened at central points, at such periods of the year as would best accommodate the teachers of the vicinity. A special appropriation to be used by the Board in maintaining such classes to a limited extent for the purpose of experiment, at least, would be of signal advantage.

And here it gives me pleasure to point to an experiment in proof of the feasibility of establishing such special classes. In July last, in response to a circular issued by Mr. Marble, Superintendent

<sup>\*</sup> For the Circular, see Appendix.

of Public Instruction in Worcester, a normal class of twentythree was opened in the rooms of the Worcester Free Institute, and taught by the professors of the Institute, for three weeks, two lessons each day. The pupils paid a fee of ten dollars each for tuition, the use of the rooms being generously granted by the trustees free of charge.

Professor Thompson, of the Worcester Free Institute, says, in a note to myself: "The class is not as large as it would have been at any time except just at the close of the (school) year, in hot weather, when most people rest and travel. That the class was as large as it was argues the need of it." If, as was the case in founding the Normal Schools, wealthy citizens or manufacturing corporations would make liberal appropriations, to be supplemented by the State, for the establishment of schools for instruction in Art and its applications to the industries pursued by them, such an impulse could not fail to be given to the work so auspiciously begun as would insure the emancipation of these industries from their present dependence on foreign artisans, and at the same time, by the coöperation of the State, and in connection with the other instrumentalities which I have named, furnish an ample supply of teachers to meet the demand of the Commonwealth.

It is the view which I have of the vital relations of this subject, alike with a true progress in general education and the higher success in our industrial pursuits, which has led me to describe so much in detail the steps taken during the past year, and which impels me to express the hope that having "put the hand to the plough" we shall not look back till something has been accomplished worthy of the importance of the subject, and of the acknowledged sagacity and intelligence for which the public acts of the Commonwealth are so generally distinguished.

#### SCHOOL FUND.

I give herewith the annual report of the Commissioners of the Fund to the legislature, which shows the transactions of the fund during the year 1871, the amount of the principal January 1, 1872, and the income for the year then closing:—

# To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts.

The undersigned, Commissioners of the Massachusetts School Fund, in compliance with the 53d chapter of the Acts of 1866, have the honor to submit the following Report of the condition and amount of said fund January 1, 1872, together with the receipts and payments during the year 1871:—

The amount of the Fund, January 1, 1871, was .	. \$2,211,410 77
Received for premium on coin payment of \$500 from	
the town of Provincetown, \$54	37
for premium on coin payment of \$124,000	
from the city of Portland, 13,950	00
premium on coin payment of \$50,000 from	
State of Massachusetts 6,500	00
from Treasurer Board of Education, unex-	
pended appropriation for Teachers' In-	
stitutes, 1,451	
	<b>—</b> 21,956 21
Total Fund, January 1, 1872,	\$2,283,366 98
The fund is invested as follows:—	
Boston & Albany Railroad stock (10,787 shares), .\$1,095,235	75
United States 5-20 bonds, 6 per cent., 30,000	00
State of Maine bonds, 6 per cent., 9,600	
bonds, 5 per cent.,	
Massachusetts Almshouse bonds, 1853, 5 per cent, . 39,000	00
Hospital and St. P. bonds, 1854, 5 per	
cent,	
Massachusetts State House bonds, 1854, 5 per cent., 18,000	00
Troy & Greenfield R. R. bonds, 5	
per cent,	
Back Bay Lands bonds, 5 per cent, 38,000	
Union Loan bonds, 5 per cent., 20,000	
War bonds, 6 per cent., 103,000	
Town of Provincetown, note, 6 per cent, 2,600	
of Plymouth, notes, 6 per cent, 12,500	
of Needham, notes, 6½ per cent., 10,000	
of Hopkinton, note, 61 per cent., 6,000	
of Newton, notes, 5 and 6 per cent., 78,000	
of North Chelsea, notes, 5 per cent., 6,000	
of Clinton, note, 6 per cent, 4,500	
City of Roxbury, note, 51 per cent., 20,000	00
Amount carried forward, \$1,845,485	75

Amount busselt Command			01	045 405	75	
Amount brought forward, . ,	•	•	401	,845,435	10	
Town of Brookline, notes, 6 per cent.		•	•	14,000		
of Westborough, notes, 6 per c	ent.,	•	•	7,000		
of Dana, notes, 61 per cent,.		•	•	6,700		
of Orange, notes, 61 per cent.,		•	•	25,000		
of Beverly, notes, 6 per cent.,		•	•	80,000	00	
of Quincy, note,	•	•	•	20,000	00	
of Templeton, note,	•	•		10,000		
of Reading, notes,				10,000	00	
of Framingham, notes,	•		•	10,000	00	
of Hopkinton, notes,				6,000	00	
- · ·			_		-	1,984,185 75
Inco	ME,	1871.				
Whole amount received in interest an	d div	ridend	s, .			<b>\$177,496 46</b>
One moiety thereof to be distributed	l to	cities	and			
towns,	•		•			88,748 <b>23</b>
One moiety to educational expenses,						\$88,748 23
Add balance of income for 1870, .	•	•	•			26,757 28
and building of income for 1010,	•	•	•	• •		
						<b>\$</b> 115,505 <b>4</b> 6
PAYMENTS FOR EI	DUCA	TION	L Pu	RPOSES.		
Secretary of the Board,				\$3,400	00	
The mollim manners of many barre					70	
Traveling expenses of members, .	•	•	•	140	อบ	
Travelling expenses of members, . Printing Report, &c ,	•	•	•	140 10,000		
Printing Report, &c,	•	•	•		00	
Printing Report, &c,	•	•	•	10,000	00 87	
Printing Report, &c , Agents' salaries,	•	•	•	10,000 4,224	00 87 32	
Printing Report, &c, Agents' salaries,	•	•	•	10,000 4,224 487	00 87 32 78	
Printing Report, &c , Agents' salaries,	•	•	•	10,000 4,224 487 87,427	00 87 32 78 00	
Printing Report, &c , Agents' salaries,	•		•	10,000 4,224 487 87,427 4,000	00 87 32 78 00 00	
Printing Report, &c , Agents' salaries,	•	•	•	10,000 4,224 487 87,427 4,000 3,000	00 87 32 78 00 00	
Printing Report, &c, Agents' salaries,	•	•	•	10,000 4,224 487 87,427 4,000 3,000 225 800	00 87 32 78 00 00 00	
Printing Report, &c, Agents' salaries,	•	•	•	10,000 4,224 487 87,427 4,000 3,000 225	00 87 32 78 00 00 00 00 65	
Printing Report, &c, Agents' salaries, Incidentals of Board, Support of Normal Schools, Aid to pupils, Teachers' Institutes, County Teachers' Associations, Massachusetts Teachers' Association, Normal School Buildings, American Institute of Instruction,	•	•	•	10,000 4,224 487 87,427 4,000 3,000 225 800 85,209	00 87 32 78 00 00 00 00 65	
Printing Report, &c, Agents' salaries, Incidentals of Board, Support of Normal Schools, Aid to pupils, Teachers' Institutes, County Teachers' Associations, Massachusetts Teachers' Association, Normal School Buildings, American Institute of Instruction, Interest to August 1, 1871, on money	•	•	•	10,000 4,224 487 87,427 4,000 8,000 225 800 85,209 500	00 87 32 78 00 00 00 65 00	
Printing Report, &c, Agents' salaries,	•	•	•	10,000 4,224 487 87,427 4,000 8,000 225 800 85,209 500	00 87 32 78 00 00 00 65 00	
Printing Report, &c, Agents' salaries, Incidentals of Board, Support of Normal Schools, Aid to pupils, Teachers' Institutes, County Teachers' Associations, Massachusetts Teachers' Association, Normal School Buildings, American Institute of Instruction, Interest to August 1, 1871, on money	•	•	•	10,000 4,224 487 87,427 4,000 8,000 225 800 85,209 500	00 87 32 78 00 00 00 65 00	104,211 <b>07</b>

This balance of income is carried forward to meet the payment of salaries due to the Normal School teachers, January 1, 1872, which will quite absorb that sum.

Joseph White, Charles Adams, Jr.,

Commissioners.

Boston, January 20, 1872.

In my last report I gave a succinct account of the origin and history of this fund,—pointing out from the reports made at various times to the legislature, and the Acts passed thereupon, the purposes intended to be subserved in the creation of the fund, and the subsequent additions made to it; and showing that the whole course of legislation from the beginning up to a recent period was in harmony with, and in furtherance of, the broad and liberal views which guided in its original creation.

And that course of legislation which had produced the most beneficent results, was reversed in 1864, when a law was passed which diverted the net proceeds of the Back Bay enterprise from the school fund when it should reach the sum of \$2,000,000, to which said proceeds had been sacredly devoted, and using them for the extinction of debts contracted in the war, thereby and to the extent of the sums thus diverted, relieving from taxation the rich and rapidly growing sections of the Commonwealth at the expense of the poorer and less thrifty districts.

When the law was enacted, providing for the increase of the School Fund from the avails of the Back Bay enterprise, and it was also provided that one moiety of the income of the fund should be paid to the towns for the support of schools, the opinion prevailed that the increase of the fund would so keep pace with that of population that the amount to be divided would, for a long time to come, be a substantial aid, especially to those towns which greatly need it. It was in like manner believed that the moiety devoted to general educational purposes would not only be amply sufficient for all such purposes, but also leave a considerable annual surplus to be added to the principal of the fund.

But the repeal of this law has brought us face to face with another condition of things.

The principal of the fund has reached its maximum, having passed the limit contemplated by the legislation of 1864, only by the receipt of stock dividends issued by the Boston and Albany Railroad, which are not likely to be repeated.

The income, which was for the past year \$177,496.46, will not be greater in future years. The moiety to be divided among the towns is sufficient to give to each child, between five and fifteen years, thirty-two cents. This small pittance will, from the present year, be annually diminished, as population increases, until at no very distant day it will become so small as to render no appre-

ciable aid to the towns, while in a large number of them, from other causes than the increase of their school population, the necessity for such aid is constantly becoming more and more pressing.

On the other hand, the reasonable requirements of the present year for the support of the existing Normal Schools, for the limited system of agencies of which I have already spoken, and for those ordinary operations of the Board and its Secretary which are required by law, more than equal in the aggregate the other moiety of income which is set apart for these and similar uses, reduced as that moiety is by the payment of interest on the sums expended and to be expended in the erection of Normal School buildings. Also, the new Normal School, at Worcester, will present its claims to the legislature of 1873, for an equal provision with the others.

Moreover, public opinion is unmistakably looking toward the adoption of a far more comprehensive system of means for the better education of teachers and more thorough supervision of the schools. It is seen that in these respects we are drifting behind the younger and vigorous States, and that there is serious danger that we shall rest satisfied with past achievements, until the contrast between our own progress and theirs will be an unpleasant subject to contemplate.

The demand, therefore, for larger means and a more perfect organization must soon be met. And can it be doubted that the people and their representatives will meet it with that wise liberality which has hitherto characterized the legislation of the Commonwealth?

With an educational system which embraces our five thousand schools, eight thousand teachers and two hundred and eighty thousand pupils, which is supported by an annual taxation of nearly \$3,500,000, and in whose successful working the long life of the Commonwealth is bound up, there need be no apprehension that any reasonable expenditures will be withheld which are necessary to keep a machinery so vast and so beneficent in vigorous and healthful play. The people will not be much longer restricted to the use of instrumentalities, which answered the demands of the time when they were called into being, thirty years ago; and which were then regarded only as the first steps towards a complete system.

While, with a generous hand, they open the doors of the public treasury, to the demands of our higher institutions, of science and liberal culture, they will not fail to make an equally generous provision for the just demands of the Public Schools, in which alone the vast majority of the children receive their only education.

#### HALF-MILL SCHOOL FUND.

I desire to invite your attention to a phase of our school system to which I have once or twice alluded briefly; but which, in my judgment, assumes such a degree of importance as to demand a more extended and careful consideration. I refer to the marked disparity in the burdens which it imposes upon the different cities and towns for its support, and the unequal benefits which it confers.

Through all the periods of our history, we have held fast to the maxim enunciated by the founders of the colony, in 1642, "that the good education of children is of singular behoof and benefit to any Commonwealth." This was the corner-stone of the great enactment, five years later, which founded the system of free schools.

The free school exists not solely, nor chiefly, for the individual persons, or separate members which compose it, but through these for the whole "body politic,"—the Commonwealth. Hence the right of the State, than which none is more sacred, and the duty of the State, than which none is more urgent, to provide free public instruction.

This may be done in three ways: -

- 1. By a general tax, levied equally upon the entire property of the State; as is the case in Indiana and one or two other States of the Union.
- 2. By taxation of the several towns and districts, to be determined as to the amount by the legal voters thereof; as is substantially the case with ourselves.
- 8. By the combined taxation of the State and the towns or districts, as in New York and the larger number of the States of the Union.

Ours is the second method mentioned. The attitude of the Commonwealth is that of command,—of force. She utters her

commands, with penalties annexed, to every city and town within her borders, to maintain schools, of such grades, in such number, and for such times as she deems best; determines the qualifications of the teachers; prescribes the branches of study to be taught, the mode of administration, and the means of securing attendance; and all this that she may secure the prevalence of intelligence throughout her borders, without which she could not exist an hour as a free and prosperous Commonwealth.

Obviously, this method of supporting a State system of schools is equitable only when the several municipalities occupy such a position in respect to population and wealth that the burden thus thrown upon one will press equally upon all.

Such was substantially the condition of things when our school system was originally established. In the homogeneous character of the people; in the similarity of their tastes, habits, modes of domestic life, and in the similarity of occupations (agriculture and the fisheries being the principal industries), were found the conditions of a substantial uniformity of "worldly fortune" throughout the several towns of the new and growing colony most favorable for the great experiment.

During the periods of our colonial, provincial and constitutional history until the close of the first quarter of the present century, these favorable conditions remained substantially the same.

But these conditions no longer exist; and the old method of supporting our schools has ceased to be equitable, and in many cases it has well nigh ceased to be practicable.

The introduction of the great branches of manufacturing industry which draw large masses of people to convenient centres; the vast increase of internal trade and of external commerce by means of our railroad system spreading like network over our territory, and all converging to a few central points, have silently, yet wonderfully, changed the old order and relations of our municipalities to each other. The population and wealth, once diffused with comparative equality, have in a large degree left the rural districts for the great centres of trade and industry.

In illustration and proof of this change, and to a certain degree of its extent, I invite attention to the following table, which gives,—first, the names of the counties, alphabetically arranged;

secondly, the valuation of each in 1871, as appears from the assessors' returns to the Secretary of the Commonwealth; thirdly, the number of persons in each between five and fifteen years of age; fourthly, the amount of county valuation which each of such persons represents; and, lastly, the valuation, &c., for the whole State.

COUNTIES.		. Valuation, 1971.	No. of Children between 5 and 15.	Amount represents			
Barnstable,	•				\$13,839,612 00	6,669	2,075 21
Berkshire,					88,746,155 00	13,085	2,961 11
Bristol, .			•		86,241,440 00	19,979	4,316 60
Dukes, .					2,331,883 00	762	8,060 21
Essex, .					141,015,586 00	38,639	3,649 56
Franklin,				•	14,838,594 00	6,068	2,445 38
Hampden,					55,858,654 00	13,787	4,015 27
Hampshire,				•	25,504,050 00	8,665	2,943 34
Middlesex.					251,556,838 00	52,211	4.818 08
Nantucket.					1,822,428 00	655	2,782 33
Norfolk, .	•				85,762,867 00	18,045	4,641 88
Plymouth,			•		80,751,063 00	12,846	2,393 82
Suffolk, .			•		627,676,574 00	49,722	12,623 72
Worcester,	•	•	•	•	121,905,942 00	87,116	3,284 46
State,		•			<b>\$1,497,351,686</b> 00	278,249	\$5,381 83

It will be borne in mind that this table is one of averages, and discloses the wide contrasts which would appear in a similar comparison of the towns and cities. Still, enough is shown to prove the general statements already made.

A brief inspection shows that the valuation of the State, divided by the number of persons between five and fifteen, gives to each \$5,381.33, which is a larger amount than is found by a similar process in any county, except Suffolk. It also appears that there is a difference in the unit of valuation represented by a single child, between Suffolk and Barnstable, of something more than six to one. It will also appear that, in the other counties, the ratio between the number of pupils and the valuation is the lowest in those in which agriculture is the prevailing occupation.

The following tables, of which the first includes the names of the cities and towns, in three groups, having a valuation of more than \$10,000,000, with the valuation in 1865 and 1871, and the

amount of increase in each; and the second includes the names of the towns, also arranged in three groups, having a valuation of less than \$300,000, with the increase or decrease in each between 1865 and 1871; will show, more forcibly than any general statements can possibly do, the wide differences of growth in wealth between the larger and smaller towns, and the rapid increase of such differences.

#### 1. Cities and Towns with a Valuation over \$20,000,000.

NAME.		Valuation, 186	5.	Valuation, 187	1.	Increase.
Fall River.		<b>\$</b> 12,632,419	00	<b>\$</b> 29,141,117	00	\$16,508,698 00
New Bedford	.	20,525,790		22,960,255	00	2,434,465 00
Lynn,	.	10,053,309	00	24,385,626		14,332,317 00
Salem,	.	16,192,359	00	22,932,925	00	6,740,566 00
Springfield, .	•	13,379,212		27,551,870		14,172,658 00
Cambridge, .		25,897,971		46,859,800		20,961,829 00
Charlestown, .	- 1	18,292,544		31,866,660		13,574,116 00
Lowell,	- 1	20,980,041		27,811,353		6,831,312 00
Brookline, .	• [	12,107,550		20,879,700		8,772,150 00
Worcester, .	•	19,701,244		38,141,250		18,440,006 00
Boston,	•	414,633,171	00	612,663,550	00	198,030,379 00
2.	Val	uation between \$	15,00	00,000 and \$20,	000,	000.
Taunton,		<b>\$</b> 8,463,074	00	<b>\$</b> 16,104,869	00	<b>8</b> 7,641,795 00
Lawrence, .		11,224,191		18,551,843		7,327,652 00
Newton		9,800,738		19,886,013		9,585,275 00
Somerville, .	•	5,683,244		15,775,000	00	10,091,756 00
3.	Val	uation between <b>\$</b>	10,0	00,000 and \$20,	000,	000.
West Roxbury,		\$10,631,146	00	<b>\$</b> 14,226,300	00	<b>\$</b> 3,595,15 <b>4</b> 06
Chelsea,	.	7,706,745	00	13,344,940	00	5,638,195 00
Fitchburg, .	•	4,240,242		11,067,361		6,827,119 00
Total of 18 C and Towns,		<b>\$</b> 642,144,990	00	<b>\$</b> 1,013,650,432	<b>0</b> 0	\$371,505,442 O
Ratio of i	ncreas	se,	•		•	.58, nearly.
State,	•	<b>\$</b> 1,009,709,652	00	<b>\$</b> 1,497,351,168	00	\$487,641,516 O
Ratio of i		_				.48

Towns having a Valuation less than \$300,000, in Three Groups.

1. Valuation less than \$100,000.

NAME.	Valuation of 1865.	Valuation of 1871.	Increase.	Decrease.
Mt. Washington, . Monroe,	\$87,676 00 79,875 00	\$99,330 00 50,216 00	<b>\$11,654</b> 00	<b>\$</b> 29,159 00
	2. Valuation	less than \$200,0	000.	
Eastham,	<b>\$</b> 219,948 00	<b>\$</b> 188,177 00	_	<b>\$</b> 31,771 00
New Ashford, .	108,662 00	110,495 00	<b>\$1,83</b> 3 00	
Peru,	214,930 00	197,782 00	<b>-</b>	17,148 0
Gosnold,	112,998 00	167,756 00	54,763 00	
Hawley,	182,638 00	178,259 00	-	9,379 0
Rowe,	180,425 00	178,951 00		1,474 0
Holland,	181,000 00	150,504 00	19,504 00	
Montgomery, .	158,850 00	152,800 00	-	6,050 0
Goshen,	152,796 00	143,000 00	_	9,796 0
	8. Valuation	n less than \$300,0	000.	
Truro,	<b>\$</b> 361,717 00	\$272,131 00	_	<b>\$</b> 89,586 0
Alford,	340,490 00	296,321 00	_	44,169 0
Clarksburg,	183,234 00	244,857 00	<b>\$111,623</b> 00	_
Florida,	152,528 00	205,037 00	52,514 00	_
Monterey,	292,117 00	282,858 00	· -	9,259 0
Savoy,	272,400 00	282,586 00	10,186 00	_
Tyringham,	299,594 00	278,261 00	-	21,333 0
Windsor,	803,824 00	297,058 00	-	6,271 0
Chilmark,	850,801 00	292,018 00		<b>58,788</b> 0
Heath,	232,551 00	256,568 00	24,017 00	40.000
Leyden,	278,647 00	229,284 09	-	49,863 0
Shutesbury, .	219,250 00	200,490 00	-	18,760 0
Warwick,	229,558 00	226,307 00	-	<b>3,251</b> 0
Wendell,	201,657 00	200,768 00	60 100 00	889 0
Russell,	212,800 00	274,989 00	62,189 00	4.000.0
Tolland,	298,588 00	294,508 00	36,039 00	<b>4,086</b> 0
Greenwich,	261,416 00	297,455 00		_
Pelham, Plainfield,	197,457 00   239,097 00	207,360 00 229,260 00	9,908_00	9,837 0
Dunanatt	211,712 00	213,798 00	2,086 00	#1001 U
Dt.	238,592 00	247,214 00	8,622 00	_
Dunstable,	891,146 00	289,407 00	0,022 00	101,739 0
Hull,	150,864 00	286,087 00	135,223 00	
Plympton,	804,305 00	292,459 00		11,846 0
Dana,	242,117 00	271,869 00	29,752 00	
	320,834 00	289,018 00		<b>31,816</b> 0
Phillipston,	020,001 00		ŀ	02,020 0

By the first of the foregoing tables it appears that while in the period of six years the increase in valuation has been \$487,641,516, the growth in the eighteen cities and towns named has been \$371,505,442, or more than seventy-six per cent. of the whole gain; also, that the whole valuation of these places exceeds the whole valuation of the Commonwealth in 1865 by nearly four millions of dollars;—and further that while the ratio of increase of the whole number of the towns named is 58 per cent. nearly, that of the second group is 99 per cent, and in several, as in Fall River, Somerville and Fitchburg, the valuation is considerably more than doubled.

On the other hand it appears that of the 37 towns enumerated, 22 have diminished in valuation, and in 15 the valuation has increased, and that the total of increase over that of decrease is only \$4,188, or less than  $\frac{1000}{1000}$  of one per cent.

Between these extremes are found the remaining three hundred towns which made returns to this office, varying in valuation from about \$300,000 to \$10,000,000, with an aggregate of \$479,163,000, and exhibiting an increase of \$107,541,000. These towns, if tabulated like the others, would also illustrate the same general law of growth, to wit: that the rate of increase for the period named is in proportion to the comparative valuation at the beginning of it. To this law there are a few notable exceptions, as in the case of Nahant, whose increase of eleven-fold in six years, shows, doubtless, how attractive a place of resort it has come to be in very early summer.

Having shown, by the foregoing statistical tables, the striking inequalities which the ratio of wealth to school population in the several counties in the State exhibit, and also that these inequalities are rapidly becoming greater, the next step will be to point out the effect produced by this condition of things upon the comparative burden of taxation borne by the several towns in the support of the Public Schools.

Accordingly, I invite careful attention to the table printed in the appendix to this Report, which gives, first, the cities and towns of each county arranged alphabetically; second, the percentage of the tax for the support of schools in each, during the school year 1870-71, on the valuation of 1871; third, the amount of said tax to each person between 5 and 15; fourth, the average length of the schools in each town during the year 1870-71.

The average for the several counties and the State are also given.

The first thing which strikes the eye on inspecting this table, is the remarkable inequality which runs through the column which contains the rate per cent. of taxation.

We note that the average for the State is 2 mills and  $\frac{10}{100}$  on the dollar; that the highest rate is 5 mills and  $\frac{96}{100}$  in Wellfleet, and the lowest  $\frac{28}{100}$  of a mill, in Nahant. We find further, that in 7 towns the rate is over 5 mills; in 28 it is less than 5 and over 4 mills; in 114 it is less than 4 and over 8 mills; in 145 it is between 2 and 8 mills; in 84 it is between 1 and 2 mills, in which class Boston and several other of the large cities and towns are included.

The county averages show that the percentage of Barnstable is 3.89 mills, and that of Suffolk 1.52 mills.

The second column discloses like inequalities in the amount per pupil which said taxation furnishes.

The average for the State is \$11.78.

Forty-six towns paid more than the average, of which Brookline stands at the head with \$25.83 to the scholar. Two hundred and eighty-four towns paid less than the average, the lowest being Savoy, with \$3.50 to the scholar. The extremes of the county averages are \$6.40 per scholar in Dukes, and \$19.16 per scholar in Suffolk.

Similar inequalities will also appear as we examine the third column, which records the average length of the schools. Six months, it will be remembered, is the statute time. The average of the State is *eight* months and *nine* days. The table shows that the number of towns having schools

Not exceeding 6 months is	•	•		•		•	47
Over 6 and less than 7, .	•	•	•		•	•	73
Over 7 and less than 8, .	•						67
Over 8 and less than 9, .	•	•	•	•	•	•	60
Over 9 and less than 10, .		•	•	•	•	•	44
Over 10,	•	•	•	•	•		89

The extremes are Boston, whose schools are ten months and sixteen days in length; and Peru, with schools of four months and thirteen days.

The extremes of the county averages are Dukes and Franklin, with schools for six months and nine days; and Suffolk, in which the average is ten months and fourteen days.

Without making further specifications, I simply state the general law which appears on a comparison of the condition of the several points named, which is that the amount appropriated to each pupil and the average length of the schools are the lowest in those towns where the rate of taxation is the highest; and the burden, measured in this way, of maintaining these schools in a large number of the rural towns is threefold greater than in many of the wealthy cities and large towns.

Besides the short schools stated in the table, there are two other important particulars in respect to which the rural towns labor under serious disadvantages, which cannot be stated in tables of statistics.

First. In the character of their teachers. As the school terms are short, and the wages paid are comparatively small, the higher grades of teachers cannot be secured. These find employment where the situations are permanent, and wages are higher. The consequence is, that while many schools are kept in these towns, very few are taught.

Second. These towns are unable to provide themselves with school-houses adapted to the needs of a successful school, and in only a small number of them are found the proper furniture, and necessary books of reference, illustrative apparatus, &c., for the aid of the teacher.

If I am not mistaken, it sufficiently appears from this imperfect discussion, that there is a wide disparity in the burdens which the present method of supporting our Public Schools imposes; that in a large number of towns these burdens are very "grievous to be borne," if not positively unjust since no corresponding benefits are received.

That these burdens, borne not for the good of individuals or of the towns alone, but chiefly in furtherance of the common weal, should be in some good measure equalized, I am sure no one will deny.

I therefore invite your attention to a method for this purpose, which is in my judgment alike practical and just in its application.

I propose that a school tax of one-half of one mill on the dollar

on the whole valuation of the Commonwealth, be annually assessed, collected and paid into the treasury, in the same manner as other State taxes, and when so paid that it be designated by the treasurer as the half-mill school fund for the support of Public Schools; and further, that said fund be apportioned and distributed among the several cities and towns in the Commonwealth according to the number of persons therein between the ages of five and fifteen, and in the same manner and on the same conditions as one-half of the income of the school fund is apportioned and distributed.

This tax, assessed on the valuation of 1871, will yield \$748,-675.84; and when distributed in the manner proposed, \$2.69 to each child between five and fifteen years of age, or a little over one-fifth of the average sum raised by taxation for each child.

I here invite a careful study of a table found in the appendix, which gives, first, the names of all the towns in the Commonwealth from which returns were received at this office for 1870-71; second, the valuation of each in 1871; third, the amount of a half mill tax assessed on such valuation; fourth, the amount to be received by each town on a distribution of the fund created by said tax according to the number of persons therein between the ages of five and fifteen years; fifth, the amount of gain or loss in each.

It will be understood that those towns will receive from the fund more than they contribute, in which the ratio between the number of persons of the age mentioned is less than the average (see Appendix, C) for the whole State, and that those will receive less than they contribute in which such ratio is greater than the average. It will also be seen by looking at the statistics in table B, that in a large proportion of the latter towns the *rate* of taxation is the lowest recorded.

With respect to the plan here proposed I suggest:-

First. That it is not a scheme for increasing the cost of supporting our schools. Not a dollar need to be added to the average cost. It is simply nothing more nor less than raising the needed amount in a more equitable way than at present.

Second. That each town and each person will contribute in an equal, and therefore just, ratio to the taxable property of each.

Third. That the method of distribution is the only one which is just and equitable and at the same time practicable. Since every town contributes to the general weal, precisely according to the number of youth which it educates, and thus fits for good citizens,

so it is plain that the amount contributed by the State should be determined by the number so educated, with the single modification, if any, perhaps, in favor of those places which incur the heaviest rate of taxation.

Fourth. That it will give a coherence and unity to our school system which it now lacks, and thus become a source of vigor and strength. It will create a stronger sympathy between the different municipalities, as mutual contributors to and receivers from a common fund, as well as the subjects of a common law. Indeed, the laws passed from time to time in the interest of harmonious and progressive action will be no longer regarded, especially by the smaller and less favored towns, in the light of arbitrary mandates, but rather as beneficent rules of action suited to the exigencies of all and for the general good. The enforcement of the laws will give place to a cheerful obedience to them.

While in the large cities and towns the burden imposed by the proposed measure will be hardly appreciable, the relief to the smaller ones will be most grateful and timely; confidence and hope will take the place of discouragement and discontent; greater efforts will follow; a more thoroughly instructed and altogether higher grade of teachers will be employed, and for longer terms of time; and a better class of school-houses, with fitting apparatus and furniture will take the place of the rude, unsightly and uncomfortable structures, which, in too large numbers, still linger among us.

To the proposed plan it may be objected:-

1. That the distribution of so large a sum may prove to be an injury rather than a benefit to the small towns, inasmuch as the relief extended will tend to remove that quick and pervading interest in their schools which always springs from the effort to sustain them, and therefore that the sum now distributed from the income of the school fund is quite sufficient for all particular needs.

To this I reply, that the income of the school fund now distributed among the towns barely serves to defray the expenses of superintending the schools, and printing the annual reports, and furnishes little or no aid in supporting them. I further reply, that since the amount to be received is less than one-fourth of the sum raised by taxation for each child in the State, there is little danger in the direction indicated. Moreover, in the

larger places, where the burden of taxation is the lightest, no such diminution of interest in the Public Schools is experienced. It is only where the towns rely upon the State for the entire support of their schools, as was the case forty years ago in Connecticut, that any lack of interest in them is to be apprehended.

It was long among us the fashion to draw comparisons quite favorable to ourselves, between our Public Schools and those of our sister State, and to attribute the supposed inferiority of hers to the existence of her noble school fund, overlooking the far more potent cause, which was, that our schools were free, and so, in the full sense, common, while hers were supported in part by a system of rate bills, and, therefore, exclusive and not common schools.

2. That it will work injustice to the towns whose contributions to the fund will be larger than the amounts they will receive. This is one of those *surface* objections which never fail to spring to the lips of the narrow and selfish whenever confronted with the collector of a tax for the general good.

"I have no children," says the rich but childless tax-payer; "why should I be taxed to educate my neighbors' children?" He fails or refuses to see that his interest of person and property alike are so interlaced with those of the community where he dwells, that his security of life and limb and dwelling, and the value of every rood of his lands and every dollar which he has hoarded, are immediately and vitally affected by the intellectual and moral training of these same children, for insuring which he grudges the pittance demanded.

Precisely such in principle, or rather in the want of principle, is the objection which I have named. And the answer is the same.

The Commonwealth is a political unit; a whole of which the municipalities are but fractions; and not as many, misled by a false analogy with the national Union, are wont to suppose, the representative head of an aggregation or collection of independent units. It is a living organism, of which the cities and towns are members, not isolated or independent, "but fitly compacted and joined" into one "body politic," so that "whether one member suffer, all the members suffer with it; or one member be honored, all the members rejoice with it."

Hence, whatever institutions exist, and whatever forms of public action prevail, whether their object be the administration of

justice, the defence against invasion or insurrection, the furtherance of great public improvements, the administration of large charities, or the general diffusion of intelligence and morality, which are essential to the healthful life and growth of the whole State, these are equally essential to that of every member of it; and so, by an inevitable logic, they claim support from the equal contribution of all. This is the general law.

That our system of Public Schools falls within this law no one will deny. Else why the existence upon the statute book, for two hundred and twenty-five years, of stringent laws to compel their support? and why such universal obedience to those laws, but for the full acceptance of the reasons which gave them birth? On this point the convictions of our people, inwrought by an experience coeval with our political history, cannot be shaken. It is known and felt to-day, that the humble school-house on the slopes of the Hoosac Mountains, or the sandy ridges of the Cape, no less than the proud palace of the great town or city, is giving forth tides of life and health which reach every member of the "body politic."

Nay, more; it is known and felt to-day, and nowhere more strongly than in the cities themselves, that, notwithstanding the rapid drift of wealth and population to them, they cannot afford to lose the elements of security, wealth and power which the rural towns supply; they cannot afford to suffer any shrinkage in the educational advantages of these towns which shall drive from the ancestral farms and homesteads the descendants of the men who first redeemed them from the wilderness, and thus put a stop to the recruitment of fresh and vigorous manhood to fill the wastes of city life; and when the great strain and pressure of war, foreign or domestic, shall come on the Commonwealth, she can ill afford to lose the array of stalwart and intelligent yeomanry who have learned the lessons of patriotic duty in the record of the lives and deeds of kindred who have gone to honored graves before them.

Legislation is eminently a practical business, and, in giving it direction and shape, it is always the part of wisdom to seek for guidance in the light of experience. I am happy to be able to add, that on the subject before us we are not left without "witness," in the experience of a majority of our sister States.

Of the New England States, Rhode Island, by a general law,

appropriates, annually, from the treasury, \$90,000, for the support of Common Schools, or about \$2.25 to each pupil.

In Connecticut, the entire income of her school fund is thus devoted, yielding \$1 per scholar, in addition to which a State tax is laid which adds fifty cents per scholar to that sum.

The legislature of Maine has, during the present winter, levied a State tax of one mill on the dollar for the same purpose.

Passing from New England we learn that the same system has prevailed in the great State of New York, since 1851. As we find in this State conditions similar to our own in respect to the unequal distribution of population and wealth, her example has a special significance for us.

In the year just mentioned an Act was passed to abolish the "rate system," which had hitherto prevailed, and to establish free schools instead; also, to raise \$800,000, by a State tax, for their support. At the end of three years, a fixed rate was substituted for a fixed sum, on the ground that, while the rate remained the same, the amount raised would gradually increase to meet the wants of the growing population. The policy thus initiated, although it met at the first with some local opposition, chiefly from the city of New York, numbered among its advocates the ablest men of the State, some of whom have earned more than a national reputation; and is now justly regarded with universal favor, both in the city and the country as the "corner stone" of her free-school system.

The present rate is one and one-fourth mills on the dollar; and the amount raised in 1871 was \$2,416,000. Adding to this the income of permanent funds, and deducting sundry general expenses, the amount appropriated to the Public Schools, for 1872, is nearly \$2,600,000,\* considerably more than one-third of the whole sum expended for their support in 1871.

I need not say that from the period first mentioned the evidences of progress in the Public School system of New York have multiplied with a rapidity scarcely paralleled in any other State in the Union,—and that no small share of this is owing, as those who administer it declare, to the policy which I have described.

I am indebted to the report of Mr. Northrop, Secretary of the Connecticut Board of Education, made in June last, for the following statements in relation to the methods adopted by other States than those already named for the support of their schools.

Of this sum, the county of New York contributes nearly \$800,000 more than it receives.

Alabama.—The constitution adopted in 1867 provides that "one-fifth of the aggregate annual revenue of the State shall be devoted exclusively to the maintenance of public schools."

Arkansas.—The school law of 1868 provides that a tax of "one dollar per capita \*\* on every male inhabitant over the age of twenty-one years, and so much of the ordinary annual revenues of the State as may hereafter be set apart by law for such purposes, shall be faithfully appropriated for maintaining a system of free Common Schools in this State."

California.—School laws of 1869. "An annual ad valorem tax of ten cents on each one hundred dollars" (equal to one mill on the dollar), is levied upon "all taxable property throughout the State," for school purposes, and is "called and known as the State School Tax."

Georgia.—The school law of 1870 specifies several sources of revenue for the "State Common School Fund," and makes it "the duty of the State Board of Education to determine the amount which, in addition to the foregoing, shall be raised annually by taxation upon all the taxable property of the State, and to report annually to the general assembly the estimate which they may find necessary to support a school in each school district in the State, at least three months in each year."

Illinois.—The school law of 1865 provides for "the annual levy \* \* of two mills on each dollar's valuation of all the taxable property in the State." But while this law is levied under a law of the State, and is usually called the "State School Tax" it is, in effect, a tax upon each county, to support Public Schools within the county.

Kansas.—The present school law provides that "one mill upon the dollar valuation of all the taxable property of the State" shall be "assessed annually \*\* for the support of Common Schools."

Kentucky.—The school law of March 21st, 1870, speaks of "the annual tax of five cents on each one hundred dollars \*\* heretofore imposed by law, and the annual tax of fifteen cents imposed by an act passed at the present session of the general assembly" (in all, two mills on the dollar).

Louisiana.—The school law of 1869 provides that "for school purposes there shall annually be levied \* \* and collected \* \* two mills on the dollar upon all the taxable property in each parish," i. e. county.

Maryland.—The school law of 1865 provided for "a State tax of fifteen cents on each one hundred dollars of taxable property throughout the State" (equal to one and a half mills on the dollar). This law has been superseded by another, but there is still a State school tax, which yielded \$405,751.51, for the year ending September 30th, 1869.

New Jersey.—The school law passed in March, 1871, reads thus: "For the purpose of maintaining Free Public Schools, there shall be assessed, levied and collected annually \* \* a State school tax of two (2) mills on each dollar of the valuation." The State superintendent writes, "the receipts from the two mill school tax next year will be \$1,098,684. In addition to this, the State continues the appropriation heretofore made of \$100,000, making a total State appropriation of \$1,198,684 for school purposes next year. This gives \$4.64 for every child between 5 and 18 years of age."

North Carolina.—The school report for the year ending September 30th, 1870, gives the "Public School revenue" for that year as follows:—

From State tax on polls (\$1.10 each),		. \$	57,958 61
County tax on polls,			6,488 62
special tax of one-twelfth of one per cent.,		•	63,011 29
tax on retailers of spirituous liquors, .	•	•	24,823 30
Making a total of,		. \$1	52,281 82

Ohio.—The school laws of 1865 provide for a State school tax "of one and three-tenths mills on the dollar," to "be applied exclusively to the support of Common Schools." In the year 1869-70, this tax yielded \$1,452,445.85.

Pennsylvania.—There is no separate State tax for schools, but the appropriation from the State treasury for school purposes is \$500,000 a year. Of this, \$83,300 is expended for Normal Schools and the salaries of county superintendents; the remainder, \$416,700, is paid directly for Public Schools.

Virginia.—The school law adopted July, 1870, provides for "a capitation tax not exceeding one dollar per annum, on every male citizen," of "the age of 21 years, and such tax on property, not less than one mill, nor more than 5 mills, on the dollar, as the general assembly shall from time to time order to be levied."

West Virginia.—The law of 1865 provides for "a capitation tax of one dollar on each \* \* male inhabitant over 21 years of age," and "a tax of ten cents upon the hundred dollars' valuation of all taxable property of the State."

Among the States named are several whose Public Schools rank among the highest in the country.

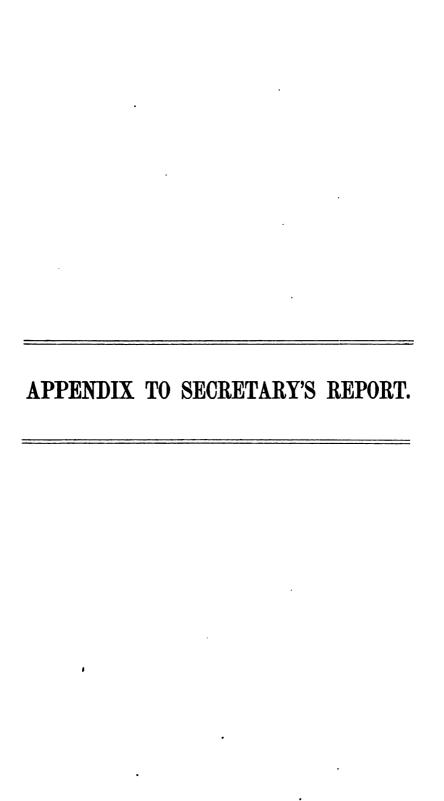
Of the States not named some have large permanent funds, the

income of which is sufficient to give the needed aid to their schools without a resort to taxation.

Having thus, as briefly and fairly as I could, presented the unequal burdens which the present mode of supporting our Public Schools imposes, and the remedy which, in the light of reason and experience, seems the most wise and just, I commend the subject to the calm judgment of those on whom the responsibility of decisive action rests.

JOSEPH WHITE.

Boston, 1872.



## [A.]

### PAPERS ON DRAWING.

ART EDUCATION, AND THE TEACHING OF DRAWING IN PUBLIC SCHOOLS.

[An Address delivered by Mr. WALTER SMITH, Professor of Art Education, and Head Master of the Normal Art School in the City of Boston, also State Director of Art Education in the Commonwealth of Massachusetts, before the Massachusetts State Teachers' Association, in Boston, Oct. 20, 1871.]

The occasion upon which I have the honor of appearing before you, is one of *such* rare occurrence, its importance educationally is so great, and the opportunity it gives me for the discharge of one of the first duties of my office so exceptionally timely, that I wish to depart from my usual custom in addressing extempore remarks upon the subject I have to treat; and, in order that I may neither waste your time by repetition, nor forget any connecting link in my discourse, I have written what I have to say, and will ask for your kindly attention and indulgence, whilst I read it to you.

In the presence of a body of educationists such as that I see before me, I need not do more than refer to the fact, that, by the law of Massachusetts, art education has been engrafted upon its far-famed system of public instruction, and henceforward will form a part, and, I hope and believe, no unimportant section of its excellent organiza-Provision for the instruction in drawing of teachers and children in the Public Schools, and of adults in the night classes, either has been already made, or will be arranged for, as opportunities occur and teachers can be found. The passing of this law, and the efforts made to comply with it, will, it is supposed, create a desire for information concerning art education, of especial interest just now; and this must be the explanation of my being here to-day. Having been appointed by this city and the State to assist in their development of art education, I would take this opportunity of stating that I believe the choice of the Art authorities of the United Kingdom, upon the request of the school board of this city, fell upon me for recommendation to the appointments I now hold, because, though acquainted with the national system of my own country and of other European States, I am not committed to, nor do I wholly approve of,

any one of them, but believe in the construction of a system, in a country where the subject is new. We can adapt the good parts of all the old methods to the requirements of this country, and omit all the bad parts. And there can be no reason why the thoroughness which characterizes the general education of Massachusetts should not influence and give tone to any instruction in technical subjects which may be added to it. Whilst we may thus profit by the experience of other nations and older civilizations than our own, there will be many features of this country and of society so superior to theirs, and so much more favorable to the development and advancement of education, that I look forward to a future in which our field of art education shall, in no prominent part, be a reflex of others, but be a combination of excellences that will offer a model for their imitation.

So much of a general introduction I conceived to be necessary, before speaking practically on the subject we are about to consider.

That subject, briefly described, is "Art Education, and the teaching of Drawing in Public Schools."

The kind of drawing which the State requires that its citizens shall have an opportunity of studying, is called "industrial drawing"; and wisely so called, for in that lies a justification of its public action in the matter.

It is so described, I apprehend, to distinguish it from those more ornamental or professional branches of art which people study rather as an amusement or gratification, or as a lucrative profession, than as an important element in the success of trades and manufactures. Economists are agreed that it fairly falls within the scope of government, in any civilized country, to initiate movements by which the trades or manufactures carried on by its subjects shall be improved in character and increased in value, and thus through a higher appreciation find a wider market for their consumption. The prosperity of the many is the argument upon which this agreement is founded. The principle thus acknowledged has led some of the most far-seeing and enlightened of modern governments to establish systems of art education, with a view of improving all branches of industrial trades and manufactures, having regard to the ultimate influence on production and sale, as well as increased value of exports and articles of home consumption. The success of these experiments has been so great that several European States at the present time owe their prosperity in no slight degree to the artistic excellence of their manufactures, brought about mainly by their cultivation of art education.

The time has arrived when the government of this State, and more especially of this city, has viewed the matter in the same light; and

thus we are upon the threshold of a new fabric,—a system education for the city and the State.

The means whereby such a system would be best organized to the requirements of all classes of society, and keep supply and dein their true relationship, has been a great problem to the e tionists of this locality, as it has been previously to the education of the Old World. There are three sections of the public t educated, -children, adult artisans, and the public generally, come under neither of the two first divisions. How this has provided for in most of the European States I may here shortl you. For children, elementary drawing is taught as a part of ge education in all Public Schools; for adult artisans, night schools classes have been established in almost all towns or populous vill and for the general public, museums, galleries of art, and cours public lectures on art subjects are becoming general. Upon the parative value of these several means, there may be and is a difference of opinion; but upon one point there is a general a ment, viz., that to make national art education possible, it commence with the children in Public Schools.

After several unsuccessful experiments, that is the conclusion which, twenty years ago, the educationists of Great Britain are and the progress which has since been made in art education, and consequent improvement of industrial art, is evidence enough the problem had been solved, and that they were on the right to To establish schools of art and art galleries, before the mass of community were taught to draw, was like opening a university be people knew the alphabet; but to provide both of these agencial conjunction with, or as a continuation of, the instruction in drawing Public Schools, was like a logical sequence, going in rational from strength to strength of an unbroken chain, from bud to be and from branch to flower of natural educational growth.

Whilst England is appropriating all the features of the M chusetts system of general education that are worth anything in Forster's scheme, we are borrowing from Great Britain, as we from other countries, the most valuable portions of their experien technical education; and I venture to prophesy that upon a b general basis we shall erect an infinitely better superstructure, so as the development of public opinion in this country will furnis with the means for its accomplishment.

What has been done here in the way of instruction in night cl for adults, is sufficient to demonstrate the need of additional eff and has shown the extent of the field awaiting culture at our ha and the fact that already a Boston Museum of Fine and Indus is on the way, and its foundations laid on a broad and compreve plan, is a final proof that eventually no feature of a perfect ne will be wanting to complete the fabric of art education.

ough these secondary agencies are matters of interest in a conation of the whole subject, it is not with them especially that we the most to do upon this occasion.

the teaching of drawing in Public Schools is that phase of the ion which most nearly interests you, and concerning which I the most to say. How, with our present means, and in a nable time, is it to be brought about, and what can be done to the teaching general?

re, at this point, we are brought face to face with the same ulty that has confronted the pioneers of art education elsewhere, Who is to teach drawing in the Public Schools? and the question be answered in the same way. To this there can be but one , which is, There can be no special teachers of drawing as a ate subject, any more than of writing or arithmetic as separate cts; but the general teachers themselves must learn and teach entary drawing to the children, in the same way they learn and other subjects. It will only be by having a teacher of drawing ery class-room in every school in the State, that all the children e taught to draw; and this you will see can be accomplished only aking the general teachers include drawing among their subjects struction. That is how the difficulty has been met in other tries, and is the only way possible of meeting it here. entary drawing were either an abstruse subject, or as difficult of sition as a new language, it would seem something like a hardthat teachers, whose daily labor is so great and whose leisure is arce, should be expected to increase their labors and sacrifice leisure to learn this new subject. But we have found in Europe a valuable and sufficient power of drawing can be acquired, by ers who have the desire to learn, in a comparatively short time, without any very great sacrifice either of their leisure or their nce. At the present time, in the Boston Normal Art School the ers of the city are receiving one lesson of one hour on alternate s, which, if they work out the exercises on each lesson, is in my on sufficient time to give; and I calculate that by next summer will have passed through a course of instruction in two subjects, and and model drawing, qualifying them to give their pupils is in the same.

other year we shall take up the subjects of geometrical and perive drawing; and though these subjects will entail a little more work, they will be got through in the sessions of one year. I can hardly suppose that you will deem such an amount of att ance on two courses of lessons as too great a price to pay for the diffication to teach elementary drawing; and I desire to inspire with confidence in your own art powers, even if yet undevelops saying that to those who are intimately acquainted with editional processes, as teachers must be, the labor of acquiring skildrawing is reduced to a minimum, whilst the result is a practical tainty. As they have great experience in teaching other subject have always found school-teachers, even with a very limited power drawing, to make by far the best teachers of drawing; and what themselves acquire without difficulty, they teach most successfully

Drawing is in many respects like a language, a visible language the language of form, having but two letters in its alphabet, straight line and the curve; in this respect like our own written we made up of combinations of straight and curved lines,—with difference, that whilst a word suggests the name and thought, d ing suggests the thing itself. Both drawing and writing depend attainment on the same faculty, the faculty of imitation; the drawing, being simpler in its elements than writing, is the most of acquirement. It has been amply demonstrated that every pe who can be taught to write can be taught to draw; and where are taught simultaneously, they assist each other,—success in being a certain indication of success in both.

Imitative power is common to the human race, and exists in dren before they can either walk or speak. It is developed so that from the moment a child can hold a pencil, it may be taugh imitate by drawing the forms it sees. Those children whom found impossible to teach to write, it would be waste of tim attempt to teach to draw; for want of capacity in the first must ceed from some physical deficiency which would prove fatal also success in drawing. But for the rest, who your own experience convince you are a somewhat considerable majority, as soon as begin to go to school, so soon should they begin learning to d and they will be found to take to and acquire it best who comm it earliest, and pursue it the most systematically through the w school course. Neither is any special gift of more than usual required to enable persons to become excellent draughtsmen. It matter of mere conjecture whether such gifts exist at all; and certain if they do exist, their possession is of no account what when compared with perseverance and a determination to such The best draughtsmen I have known began to draw at about years old or earlier; and it is a singular commentary on genius, w is supposed to be heaven-born, that those men who are most un cknowledged to be geniuses, have spent their industrious lives improvement, ignoring their supposed endowments, and worktiently like journeymen whilst learning a trade.

nay be expected that I should refer to methods or system in ng drawing. Much undoubtedly depends upon the way in which ng is carried on, that definite objects should be sought for, and rious steps be graduated in difficulty, though well defined in e. My own experience leads me to think there are good points very opposite methods, and failings in all. It is impossible, as human nature is varied in individuals, that any method of tion should apply equally well to a number of different charor develop the faculties of all. A cast-iron method or system poses such a similarity of disposition and faculties in pupils as existed or is likely to exist; and unless a system, whilst adhersely to principles, is at the same time elastic in practice, it will ly cramp and destroy the faculties it was intended to develop. matter much depends upon the teacher,—a good, kind and hetic teacher producing better results upon a bad system, than eacher would upon the best of methods.

e are, however, some schemes of art instruction which have nore widely tried than others, and experiments in them more

ed by long practice.

old drawing-master's method of giving shaded copies to ers, without any arrangement of examples or sequence in subfollowed no longer in any national art schools in Europe, or Public Schools under government inspection. The use of flat es only, without extensive illustration on and explanation from ckboard, is also becoming a thing of the past. nly described as the English blackboard system of teaching tary drawing is perhaps the most elastic and efficient of methclass teaching, but it should not supersede individual instrucmultaneously given; nor can it be used successfully without current use of text-books in the hands of each pupil, to supcurate illustrations of the course of study, and to encourage work in support of school work. Unless a pupil can be induced sometimes wholly by himself, he never attains to self-reliance, rns how to master an entirely new difficulty without resorting tance from other people.

group of art instruction in elementary drawing which is consuitable to the powers of the pupils in day schools comprises bjects, and includes:—1. Free-hand Drawing. 2. Model or Drawing. 3. Memory Drawing. 4. Geometrical Drawing. pective. A thorough grounding in these subjects is one of the

best preparations for any further study of the higher branches of education. A pupil having passed examination in such, would ready to take hold of the instruction in schools of art, or even continue his studies by himself in more advanced subjects. The groof five subjects named, is that in which the Public School teachers England have to become proficient, and for a successful examinat in which the government grants a drawing certificate, stating that holder is competent to give instruction in drawing in Public School

The adaptation of this course of study to the graded schools of country is not a difficult matter, the moment the corps of teach become qualified to teach drawing; and it can be commenced at o in those subjects which the teachers themselves are practising, have already become proficient in. The order in which the subject usually taken will decide the suitability of each to the difference schools.

A simple arrangement would be as follows, giving three subject each grade of school:—

In Primary Schools—Free hand, Model and Memory Drawing.
Grammar Schools—Memory, Model and Geometrical "
High and Normal Schools—Memory, Model and Perspective "

I propose to describe to you in what manner and to what deg these objects may be taught in the three grades of schools.

#### 1. PRIMARY SCHOOLS.

Free-hand outline Drawing.—In the very earliest lessons to youngest children, drawings on the blackboard by the teacher are only examples used, the illustrations being vertical, horizontal and lique lines singly and in simple combinations, such as angles, squa triangles, and the division of straight lines into equal or proportion parts; curved lines associated with straight lines on the simplest s metrical arrangement. That is the commencement of free-hand di ing, the pupils drawing on their slates until the first difficulties are of A moderate use of Roman capital letters is not objectionable for ies, but too frequent use is wearisome. Very young children draw best those forms in which there are the fewest possible lines, those lines expressing the forms of objects they are most familiar w -apples and pears, common crockery-ware, leaves of trees and flow and such like. The older pupils who are drawing free-hand out from the board upon paper, should have their subjects alternated flat copies, to be drawn either the same size as the originals enlarged a definite proportion, either a third, or a fourth, or by m 3.]

d.

as an inch or two inches in height and proportionately in width. Il the blackboard lessons are exercises in the reduction of forms, well to vary the lessons by practice of the identical size and by regements. I have found it not to be a good custom to keep childrawing on slates longer than the time when they attain the er of fairly balancing the forms given them to copy. It is so easy about errors upon slates that carelessness often results from too practice on them.

the choice of examples, it should be remembered that diagrams objects should be represented geometrically, not by views of the cts as seen in perspective, until the pupils have arrived at drawing objects. The principal use of free-hand outline drawing, is to h pupils the proper use of materials, the names of lines and forms, to educate the eye in judging of proportion; also to inculcate eption of the beautiful in curves and forms of objects.

he time given per week to drawing should not be less than two rs. With the youngest children, the length of each lesson should be more than half an hour, i. e. four short lessons per week; with e a little older, three lessons of forty minutes each; and with the

st pupils, who draw upon paper, two lessons of an hour each. is of some importance in maintaining interest in the lessons, that a should be complete in itself, the exercise be begun and finished he allotted time; and if this be found difficult, it is better to take oler examples with less work in them, than either to lengthen the given, or leave the exercise unfinished. In the same class, if e pupils draw better than others, the best may be allowed to draw ooks, and the more backward on slates. Each exercise should be

cized by the teacher during the lesson, in addition to the general cism from the blackboard, thus combining individual with class

he object given as a lesson should be well drawn on the blacked before the lesson begins, and the teacher in giving the lesson ald commence by explaining its proportions and general character, then draw it again, step by step, during the process of the lesson, g followed by the class, line for line, as the form develops on the

he standard of quality in outline varies in different countries; but ther a thick or thin line be allowed, it must be the same thickness hinness everywhere; and the best line, in my opinion, is, a thin, o, unbroken line, without the slightest variation in a whole drawing, er in color or breadth.

fodel Drawing in Outline.—The model drawing in Primary Schools .

should be of an exceedingly simple character, for into the proposition of it perspective must more or less enter. Only the children ought to attempt it; and the objects used, to be as much possible those which appear of the same form on all sides. These be defined as such objects as are turned in a lathe, or made up potter's wheel,—thus, a cylinder, a sphere, a cone, in geometric sha a vase without a handle, a goblet, or a wine-glass, a basin, a same a round bottle; or wooden vessels, such as a bucket or a round. These have the double advantage of being symmetrical, enabling teacher and pupils to use a central line in drawing them, and they be seen alike by all the pupils, so that the explanations and demonstions given on the blackboard will apply to all the drawings made

The models used should be painted white, which displays the five better than any color. If rectangular solids be used, such as cur oblong blocks, prisms, square boxes, chairs or such like, the tea will find himself plunged at once into all the difficulties of linear spective, beyond the understanding of children so young as those

Primary Schools.

With regard to the method of teaching, and implements used, or I have said with reference to free-hand drawing from flat example the blackboard applies similarly to object drawing. Care must taken in setting a model for the class, that it is not placed so nearly pupil as to give him a distorted view, or so far away as t seen with difficulty. The best position with regard to height is the top of the object should be at least six inches below the leventhe pupil's eye. A set of three or four dozen objects should be in each class-room, in a cupboard or cabinet reserved for the purpand teachers might occasionally exchange models of equal value each other, so as to give freshness and variety to the subjects; or wise the pupils may get wearied of drawing the same objects over over again.

Combined with free-hand and model drawing, the definition plane geometric figures should be taught, and are best taught by b drawn as exercises, as well as learnt by heart. This will be prep tion for geometrical drawing, to be afterwards learnt in the Gram Schools, as well as being of great value in imparting correct knowle

of common forms.

Drawing from Memory.—The third subject for the Primary Sch is drawing from memory.

I attach the very highest importance to the systematic development of memory drawing as an element of education, and art education incomplete without it. Beginning with geometric forms of a geometri

It will be found possible to lead even the children in Primary is to reproduce entirely from memory the copies which they have y drawn, however elaborate and full of detail they may be. All emory exercises will consist of recently finished drawings, the tions of which will be easily remembered, though at first it may ressary that the teacher should describe to the class some of the g characters of the example given, to refresh the memory before pils proceed to draw it. At the conclusion of the exercise, the nd worst efforts should be taken to the board, and their good ad qualities pointed out and criticized, and an accurate drawing example be put on the board for each pupil to contrast and are with his own work. He should then be allowed to correct evise his drawing from the teacher's example upon the board. exercises in memory drawing may also occasionally be required pupils, with much advantage.

#### GRAMMAR SCHOOLS.

group of subjects of model, memory, and geometrical drawing, le for pupils in Grammar Schools, introduces one new subject -that of geometrical drawing, which takes the place of freeoutline, practised sufficiently in drawing from objects and mem-The model drawing may now be made to include such geometms as can be used to convey the first elementary rules of perve, such as the convergence of parallel lines retreating from the he fore-shortening of lines and planes according to the angle nake with the direction in which the student is looking at the , and other elementary rules. More difficult models being used, pupil will have a different view of the same object, and though d principles may and should be explained by diagrams on ackboard, the teaching will be more individual than before. The ring of heights and widths proportionately, and of vanishing , by means of the pencil held in the hand, at the full extent of itstretched arm, must be explained to and practised by the pufor that is the only practical and accurate method of model ng. This way of measuring, which every draughtsman and adopts, does not come under the head or description of mechaniasurement, being only the means of ascertaining the proportion various parts, as affected by the laws of perspective. Instead gle objects being given, as in the primary schools, groups of obnay profitably be placed before the pupils, some of which they ave already drawn, and others which will be fresh to them. etric solids, such as the cube, oblong block, triangular, square, conal and hexagonal prisms and pyramids, as well as the cylinder, cone and sphere, are very usefully employed, each or more one at a time, in conjunction with some familiar object, together posing a group of forms. There will shortly be in this city a plete set of such models, which will be deposited, for the exami of teachers, in the Appleton Street School; and I would conthem to your careful notice. The great difficulty, at present, the friends of art education in America will have to meet, is the vision of suitable examples for study; so that I see no other to forwarding the cause or of removing the difficulty than by est ing an agency, either by the State or through private enter where all the most approved models and copies may always be able at a moderate cost. At present, models which a professive ducated art master could conscientiously use, do not apparently on sale in the United States.

In England, nearly forty years ago, when the nation was awa to the necessity of at once giving an art education to its peop two difficulties were the want of teachers and of copies. The be our want, but it will exist no longer than people feel apabout the matter. When once a real, earnest demand shall exiwant can be supplied, in as many months as it has taken years to duce them in the old country. In this matter, England has be pioneer, and we must profit by her experience.

Memory Drawing.—Just as the groups of subjects in model ing will be more difficult than those used in Primary Schools course the memory exercises will be more advanced also. Som a whole class may be required to draw any given example whi been practised months before, or perhaps formed part of a cothe Primary Schools. Every pupil should have one lesson per warving on the blackboard, in chalk, on a large scale. It wo well to let a third of the class draw either their models or mexercises, upon the board,—each lesson,—so that during the wathree lessons be given, all will have drawn upon the board.

Geometrical Drawing.—The pupils having been previously the definitions of terms used in plane geometry, may be passed the construction of figures. Each pupil requires a good pair of compasses, a ruler with inches marked upon it, and a ruled be smooth paper to work his problems in. The teacher enunciat problem to the class, who writes the enunciation from his dice. He then works out the problem on the board, the class following by step. Six elementary problems are an hour's work, and four more intricate problems will take the same time. Every the

lesson in geometrical drawing should be a resumé from memory vious lessons. There is one consideration, with reference to abject, teachers should strongly impress upon the minds of

As demonstrations of the results are not required, their own by must be the demonstration. If a geometrical drawing is not te, it is nothing, or worse than nothing. It does not pretend to autiful, and unless intensely true in its result, is not useful, but to of delusive and worthless ugliness. I mention this because will sometimes apologize for inaccurate results, by stating that to know how to work the problem, which always seems to me gravation of the original offence rather than an excuse for it. it a man caught in the act of telling a lie, who tries to excuse f on the grounds that he knew it was a lie, and did not himblieve the statement he was making. Accuracy and inaccuracy arely habits which are formed either by good training or bad and is instruction.

h and Normal Schools.—In the High and Normal Schools a range of study is permissible, because the capacities of the stuare more developed. Still, it seems to me that there is some in attempting too much. In future years it will be desirable as students in the Normal Schools should, during their period of g, complete an advanced course of lessons in the five subjects of and, model, memory, geometrical and perspective drawing, and sing examinations in them receive diplomas or certificates of tency to give instruction, the examinations being conducted, plomas awarded by the responsible officers of the State govern-

This, however, must be a matter of growth.

model drawing of the High and Normal Schools should be made instructive course, and besides illustrating the use of different als, as chalk, monochrome and color, be very comprehensive in a Drawing from plaster casts in crayon and sepia; from of natural objects, as fruits and flowers; from still life and object art, in water-colors,—will give a wider scope and a greater at to the object drawing than was possible in the elementary

wing ought to be so familiar to the pupils who have previously through the Primary and Grammar Schools, that in the High ormal Schools it should be used generally in the study of other is, and exercises in botany, geology, natural history, anatomy or nics be readily illustrated by drawings and sketches, in the ation of which instruction would be given to the students in g and coloring.

In these exercises high finish or pretty ornamental painting are to be sought after,—good drawing, having a round effect, and f tinted like nature, being more educational, besides being more econ ical of time, than finished painting.

In time I hope the neglected subject of art education may bee of so much value educationally, that we shall use it freely in acquired knowledge of history, of the social life of other ages and people the glorious art epochs of the old world, and the still glorious nar phenomena which surround us every day in the new world. A resperception of the beautiful in nature and art, and the enjoyr arising therefrom, will be ample compensation for time spent in study, by those who derive no pecuniary or social advantages it.

The additional subject of *Perspective* is put down for study in High and Normal Schools. It is of course of the very highest im tance to the proper understanding of all kinds of drawing, and has same relationship to linear representation that grammar has to guage. It would be possible to speak grammatically without a kn edge of grammar, and to draw accurately, as Turner did, with technical knowledge of perspective; but these things are post only to the few whose enormous experience compensates for want of education. Perspective, studied systematically, gives teacher of drawing such a grasp of the whole subject of linear resentation, that, combined with model and memory drawing, he never be at a loss for examples, nor fear to reproduce them.

In this subject, which is taught entirely on the blackboard, teacher requires much power of illustration by sketches, and g clearness of verbal explanation, to make the problems intelligible the student. Great experience in teaching the subject has enaus to reduce its main principles to a plain system, and when we see the assistance of a good text-book it will be found comparatively of attainment. Geometrical drawing must necessarily precede study of perspective, which is dependent on it for the construction forms used, as well as for experience in handling the instrument which it is worked out.

I feel now that I have occupied more than I had a right to of valuable time, and with a few words will conclude. It is diffi without illustrations and examples of reference, to convey clearly that is meant about a system of art education. Being here a comparatively new subject, I have been precluded from appealing your remembrance of exhibitions and public displays of the workstudents. It was intended to have here to-night a collection of dings, the property of the State of Massachusetts, recently acquired partly by gift and partly by purchase, from the South Kensing

m in London, illustrating the course of study in English schools. Practical difficulties stood in the way of this; but I am d to refer you to an exhibition which is shortly to be held in some of the society of artists in Boston, which every lover of d friend of art education should see. Including two valuable ions of students' drawings,—the one just referred to, and er which is the property of the city of Boston,—there will be its of works displaying the systems of art education in France Belgium. The three systems are entirely different, and I think ill agree with me in saying, when you see the works, that each reat and distinctive merits. The exhibition will offer the ials also for a comparison of results which will be of the greaterest to the educationist. I believe I am right in saying that be open in about a fortnight from the present time.

on a just recognition of the good features in the systems of ies where the subject is not a new one, and a deliberate contion of our own circumstances and requirements, let us hope in o establish a sound system of art education in this State. It is branch of education capable of a very rapid growth, for you that "art is long"; but the same wisdom that has built up the ficent educational system of Massachusetts, will, I feel confibe as capable of perfecting and completing each phase and a that it may be considered desirable to add to that system; aving passed the law that it shall be done, will be in no dispoto look back, or be impatient and lose heart if the highest id onot immediately manifest themselves.

have the satisfaction of knowing, that, in beginning with the Schools, we are beginning at the right end; and we have the ect of possessing, before very long, a central institute of art in oston Museum of Art, which will be like the headquarters of t for the State. The education of teachers will be provided for city by the Normal Art School, and before very long there will dly a school in which satisfactory instruction is not given. The of examples to carry on an efficient course of art education ollow upon the demand for them, without unnecessary delay, ius I maintain that the prospects of naturalizing the subject and ling for its development are of the most encouraging character. e all, there are men in this city and State who take the most ehensive view of the public aspect of this question, and are ed to spare neither their time nor their means in carrying it th. To them, and to all others who assist in the cause, I wish cess, and feel a strong gratification on my own part that I shall mitted to help in the inauguration of a system of art education great country.

### Commonwealth of Massachusetts.

Office of the Secretary of the Board of Educat Boston, November 10, 187

Chairman of the School Committee of

Your attention is respectfully invited to the following law:-

[Chapter 248, Acts of 1870.]

SECT. 1. The first section of chapter thirty-eight of the General Statereby amended, so as to include drawing among the branches of learning are by said section required to be taught in the public schools.

SECT. 2. Any city or town may, and every city and town having moten thousand inhabitants, shall annually make provision for giving free tion in industrial or mechanical drawing to persons over fifteen years either in day or evening schools, under the direction of the school commit SECT. 3. This act shall take effect upon its passage. [Approved May 1]

In order to furnish the necessary information, and to enable included by population under the law above recited to complits enactments, the State Board of Education has appointed a officer, whose duty will be to give professional advice on all te matters relating to Art Education in the State, and in othe carry out the decisions of the Board in respect thereto, as its It has been felt that to engraft this comparatively new branch struction upon the educational system of the State, and to n the subject of night-school instruction, would require experience fessional knowledge both of the means and appliances by white Education can be carried out, and for its organization and superwhen established.

The means adopted by the Board to secure this informatidirection have been as follows:—

The city of Boston having recently appointed a Head-Mast Professor of Art Education in its Normal Art School, and Direct the night classes for Drawing established in compliance with the Act, and having only need for the employment of a portion time, the State Board has also secured his services as profession viser in the matter of Art Education. This gentleman, Mr. W. Smith, late of England, has entered upon his duties as State D. of Art Education, and the object of this circular is to explain officers of the cities and towns in the State, to the teachers Public Schools in the Commonwealth, and others interested in vancement of Art Education, how they may avail themselves

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stance. Numerous applications for information, arising probably a desire to comply with the law, have made the issue of some eral information a matter of necessity.

#### PUBLIC SCHOOLS.

t is supposed that before drawing can be satisfactorily taught in schools, the teachers must have a clear and well-defined system of nentary teaching brought before them which can be acquired by nselves, and not too difficult to impart to their pupils. ng partially accomplished by the practical demonstrations and adsses on the teaching of drawing given by the Director at the chers' Institutes, and will be continued by the same means at the mal Schools, and in other ways. The reprint of a paper by him n the subject, read before the Massachusetts State Teachers' Assoion, and of other papers, in whole or in part, heretofore printed by Board, will be made, and circulated among the teachers of the olic Schools in the State. Other papers bearing upon the question. containing such information as may be deemed of service to chers, may also be issued, as occasion demands. Inquiries on cial subjects, or technical difficulties, may also be addressed by chers to the State Director of Art Education.

#### EVENING CLASSES.

A circular stating the course of instruction in Drawing, arranged Mr. Smith, and in use at the free evening classes of the city of ston, is appended to this. It is constructed so as to embody such eral subjects as are attainable by all classes of students, in evening rk, by gas-light, color being generally excluded from the course. comprises what is usually included under the term "Mechanical or lustrial Drawing"; but to this might be added, as of equal imtance to some trades and occupations, the subjects of modelling in y and casting in plaster, where room and appliances are obtainable the study, and a teacher can be procured. To facilitate the estabment of such evening classes, the Board has obtained a complete lection of models, casts, and other apparatus and examples, in use the Schools of Art of Great Britain, together with a set of the rks of students in those schools, illustrating a complete course of truction in all the stages of Art Study, by actual specimens of the dents' productions, from the most elementary works to the most ranced. This collection of drawings and examples is to be deposl at the State House. It will be lent for exhibition to any city or vn engaged in forming free evening drawing classes, provided the committee of local Board of Education will be responsible for lic display, safe custody and return. At the time of such an tion, the Director of Art Education will, on request, attend pe any conference of the School Committee in the locality, to a the detailed information requisite in commencing Art classest teaching and general management, and give, if desirable, an on the subject to public meetings called to consider the que Art Education. As, however, many of such applications may pected, it will be necessary to give notice some time previous period at which such exhibitions, conferences or meetings may sired, in order that arrangements may be made without int with similar efforts in other places.

Among the several ways in which the State Director of Art tion may be of assistance to School Boards are the following:

- 1. Giving information as to the best methods of fitting, arranging and class rooms for the study of drawing—the provision, cost and preparexamples for instruction.
- 2. Consultation with teachers, or their examination as to fitness for ment as teachers, and instructing them in the use of the examples pro the course of study.

All applications in response to this circular should be addressed follows: Walter Smith, Esq., Director of Art Education Broadway, South Boston.

FREE EVENING CLASSES IN BOSTON for the Study of Industrial I held in the Normal Art School, Appleton Street, and in the Institute nology, Boylston Street.

Days and hours of study: Monday, Tuesday, Thursday and Friday, to 9, P. M.

Students allowed to attend either on Monday and Thursday, or Tues Friday evenings, but not oftener.

STAGES AND SUBJECTS OF STUDY.

Elementary
Course
From Copies.
Advanced Course.
From the Real
Object or De-

STAGE I—Instrumental Drawing.

Sections: a, Linear Geometry; b, Me and Machine Drawing; c, Linear Pere d, Details of Architectural Drawing an ing Construction; e, Ship-Drafting.

[Stage I., consisting of Instrumental Draw

present carried on at the Institute of Tech

STAGE II.—Free-Hand Outline Drawing of Rigid Forms, from Flat Examples or Copies.

Sections: a, Objects; b, Ornament; c, Flowers, Foliage and Objects of Natural History; d, The Human and Animal Figure.

Mediums used: 1, pencil; 2, chalk; 4, ink.

STAGE III.—Free-Hand Outline Drawing, from the "Round" or Solid Forms.

Sections: a, Geometric Solids, Vases, etc.; b,
Ornament from the cast; c, Flowers and Foliage from nature; d, Details of the Human
Figure, and Animal Forms from the cast.

Mediums used: 1, pencil; 2, chalk; 4, ink or sepia.

STAGE IV .- Shading, from Flat Examples or Copies.

Sections: a, Models and Objects; b, Ornament; c, Flowers and Foliage; d, Details of Human and Animal Figures; e, Landscape Details.

Mediums used: 1, pencil; 2, chalk; 3, charcoal; 4, ink or sepia.

STAGE V .- Shading, from the " Round " or Solid Forms.

Sections: a, Geometrical Solids and Vases; b, Ornament from the cast; c, Flowers and Foliage from nature; d, Details of Human and Animal Figures from the cast.

Mediums used: 1, pencil; 2, chalk; 3, charcoal; 4, ink or sepia.

STAGE VI - Original Design.

Sections: a, Elementary Design of Geometric Forms to fill given spaces; b, Ornamental arrangements of Natural Forms, conventionalized in one color or monochrome, to cover given spaces; c, Ditto in color, harmonized; d, Applied Design for Surface Decorations; e, Applied Design for the "Round," in wood, stone, metal or clay.

Mediums used: 1, pencil; 2, chalk; 3, charcoal; 4, monochrome; 5, color.

s provisional course is arranged, both as to Stages and Sections, in progressder. Students who are not beginners should show the teachers some work by done by them, that they may be placed in their right position in the Beginners are to commence at Stage II, and they will be promoted by asters according to progress made.

drawing will be considered finished until stamped by the master of the in which it is done, and a new drawing must not be commenced until the

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anced urse. old one is so stamped. All finished drawings are to be left in the Schothe Drawing Committee reserve the right of retaining selected works will be returned to their authors, after each annual exhibition.

Voluntary examinations will be held at the end of each term, in A those who wish to obtain certificates of proficiency.

WM. T BRIGHAM, Chairman.
WALTER SMITH, Director of the Cl

Your attention is also respectfully invited to the papers on the jeot of Drawing, printed in the Appendix to the Thirty-Fourth I of the Secretary of the Board.

JOSEPH WHITE,
Secretary of the Board of Educate

#### TEACHERS' CLASS.

There is an urgent demand for teachers who are qualified to charge of the evening classes in free-hand and industrial derequired by law in the large towns of this State.

Letters from nearly all the superintendents of public instructions towns state that the experience of the past winter indicate necessity for providing, at once, some normal instruction for persons as have some skill in drawing who would be glad to fit selves for this special work.

Such a course of instruction is also a good training for all te in Public Schools.

Arrangements have been made to organize a class for a couthirty lessons, provided a sufficient number apply, at the rooms Worcester Free Institute, the use of which has been generously oby the Trustees, free of charge. The conditions under which class will be opened are the following, viz.:—

- 1. The number in the class shall not be less than thirty.
- 2. Each pupil must have some knowledge of the subject at the outset.
- 3. The number of lessons will be thirty, and will be essentially a rep of the course given in this city last winter.
- 4. The lessons will be given twice a day for the first five days in the beginning early in July; and the hours will be so arranged that residneighboring towns can come and return daily by cars.
- 5. The instruction will be given by members of the faculty of the Institute.
- 6. The main object of the course will be to teach ladies and gentleme can draw, how to teach drawing.

The fee for the course will be ten dollars, payable in advance.

Applications must be made before the twentieth of June.

Full particulars in regard to this class will be given as soon as the question foundation is settled.

ard can be obtained in Worcester at one dollar a day.

class for Laboratory practice will also be formed at the same e, under the same conditions as to time, instruction, number and use. Any person who has some knowledge of elementary chemmay join this class. The exercises will be so arranged that those wish can join both classes.

oplications for either class are to be sent to

A. P. MARBLE, Supt. Public Instruction, Worcester, Mass.

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## [B.]

Showing, 1st, the percentage of tax for the support of school the school-year 1870-71, in each town, on its valuation in 187 the amount of said tax to each person between 5 and 15; 3 average length of the schools in each town during the year 18

#### BARNSTABLE COUNTY.

OI	TY	OR	TOW	N.		Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5 and 15 years of age, 1870-11.	
Barnstable,	-		1			8.003-26	89 04	Mos.
Brewster, .				1		3-02	7 57	7
Chatham, .		1		-	17	4-71	7 37	9
Dennis, .				-		3-84	6 65	
Eastham, .			-		4	5-31	8 47	6
Falmouth, .						2-73	7 39	1
Harwich, .		-	-		-	4-20	5 56	1
Mashpee, .			1	-		2-46	4 31	5 5 8
Orleans, .			-	-	- 3	4-94	9 20	8
Provincetown,	-	-			4	3-72	9 50	10
Sandwich, .			1			4-97	8 44	1 6
Truro, .		100	-		16	5-51	4 66	7
Wellfleet, .					1	5-96	11 79	7
Yarmouth, .		*		15	-	2-88	10 78	8
Average,						\$.003-89	\$8 09	7

#### BERKSHIRE COUNTY.

Adams,							8.003-40	89 29	
Alford,							1-09	4 06	
Becket,							3-67	5 45	
Cheshire,					61	6	2-06	5 00	
Clarksburg	,		10				2-04	3 55	
T)-14			-				2-39	9 34	
Egremont,			12				2-10	7 11	
Florida,							3-90	4 23	
Great Bar	ringt	on,	-				1-56	8 85	
Hancock,							1-45	4 64	
Hinsdale,							2-92	7 67	
Lanesboro	igh,			23			2-60	6 33	
Lee, .							3-45	6 26	

## BERKSHIRE COUNTY-CONTINUED.

c	ITY	OR S	row.	n.			Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5	and 15 years of age, 1870-71.	Average length of	
_							<b>\$.002-88</b>	<b>\$</b> 10	87	Mos. 6	Days.
<b>x</b> , .	•	•	•	•	•	•	2-82	5	80	6	10
erey, .	٠	•	•	•	•	•	8-02	4	05	7	
Washing	ton,	•	•	•	•	•		8		6	17
Ashford	, ,	•	•	•	•	•	1-86		80		14
Marlbor	ough,	• •	•	•	•	•	2-29	5	87	7	2
	•	•	•	•	•	•	8-55	6	89	В	10
••••	•	•	•	•	•	•	8-08	6	06	4	13
field, .	•	•	•	•	•	•	2-27	7	71	9	2
mond, .		•	•	•	•	•	1-45	8	74	6	17
isfield,	•	•	•	•	•	•	2-40	4	48	5	14
у, .	•	•	•		•	•	2-24	3	50	6	-
y, . ield, .						•	8-73	9	62	7	15
bridge.			•				1-51	10	18	8	10
ngham, hington,					•		2-51	5	88	6	8
nington.							2-61	4	79	5	17
Stockb	ridge.		•				2-15	4	85	7	4
amstown	)			•			2-68	6	88	8	-
isor, .	•	•	•	•	•	•	2-69	5	56	5	16
Average	la. •	• .	•				<b>\$</b> .002-45	<b>8</b> 7	80	7	10

### BRISTOL COUNTY.

hnet, .							\$ 003-33	<b>8</b> 8 <b>47</b>	8	_
borough,							8-83	8 66	8	4
ley, .							• 3-78	8 11	6	18
mouth,							2-89	7 03	7	9
ton, .							3-58	8 45	7	в
, .	-	-			•		8-01	8 46	8	5
aven.	-	•					3-96	10 68	9	18
River,	•	•	•	-			1-58	7 93	10	15
town, .	•	•	•	•	-		2-80	5 56	8	12
field, .	•	•	•	•	•		2-83	5 18	6	8
Bedford,	•	•	•	•	•	•	2-34	14 28	10	8
Deuloia,	•	•	•	•	•	:	2-61	6 69	7	8
ham, .	•	•	•	•	•	•	1-88	6 29	7	_
both, .	•	•	•	•	•	•	8-52	8 48	6	_
onk, .	•	•	•	•	•	•	1-93	6 59	6	8
erset, .	•	•	•	•	•	•	2-85	6 37	7	17
•	•	•	•	•	•	•	8-12	8 12	5	16
1808, .	•	•	•	•	•	•	1-86	8 66	9	7
ton, .	•	•	•	•	•	•			7	
port, .	•	•	•	•	•	•	8-25	8 21		15
Average,						•	\$.002-18	<b>\$</b> 9 20	8	18

## BOARD OF EDUCATION.

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## DUKES COUNTY.

CIT	Y	OR	TOW	N.			Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5 and 15 years of age, 1870-71.	Average length of	achools in 1870-
Chilmark, .			•				<b>\$.001-88</b>	<b>\$</b> 5 23	Mos.	D
Edgartown,	•	•	•	•	•	•	1–61	6 19	7	
Gay Head,	•	•	•	•	•	•			7	
Gosnold,	•	•	•	•	•	•	0-74	6 58	6	
Tisbury, .	•	•	•	•	•	•	3-51	<b>6 9</b> 8	6	
Average,	•	•	•	•	•	•	\$.002-09	<b>\$6 40</b>	6	
				ESS	EX (	cou	NTY.			
Amesbury,							\$ 002-94	<b>8</b> 6 89	6	1
Andover, .		•	•	•	•	•	3-83	18 92	8	
Beverly, .			•		•	•	2-14	9 44	10	
Boxford, .			•		. •	•	1-43	7 63	8	
Bradford, .			•		•	•	4-18	11 33	10	
Danvers					•		3-25	8 26	9	
TO			•		•		2-89	6 72	7	1
Georgetown,	•		•		•		4-31	9 37	8	1
Gloucester,		•	•		•	•	8-89	9 37	9	•
Groveland,	:	:	•	•	•	·	2-47	5 90	9	
Hamilton, .	•		•	•	:	:	2-09	7 69	.7	1
Haverhill, .		•	•	•			2-77	12 24	7	•
Ipswich, .	:		•	•	•	•	2-65	7 69	9	
Lawrence, .	•	•	•	•		•	2-48	9 50	10	
Lynn, .	•	•	•	•	•	•	2-23	9 21	10	
Lynnfield, .	•	•	•	•	•	•	1-83	9 68	9	
Manchester,	•	•	•	*	•	•	2-26	9 40	10	
M L1 - L 3	•	•		•		•	3-18	7 61	10	1
Methuen, .	•	•	•	•	•	•	2-85	10 81	9	•
Middleton,.	•	•	•	•	•	•	3-82	7 80	9	
Nahant	•	•	•	•	•	•	0-28	17 89	11	٠
Nambu	•	•	•	•	•	•	2-03	6 48	7	:
Newburyport,	•	•	•	•	•	•	3-38	9 79	10	•
North Andover,	•	•	•	•	•	•	3-03	11 63	9	
Peabody, .	•	•	•	•	•	•	3-03 3-65	11 03 13 19	9	
Rockport,	•	•	•	•	•	•	3-00 3-10	6 21	8	
Rowley, .	•	•	•	•	•	•	3-10 2-24	5 61	7	:
Salem, .	•	•	•	•	•	•	2-2 <del>4</del> 2-16	9 29	10	
Salisbury, .	•	•	•	•	•		2-10 2-79	6 90	8	
Saugus, .	•	•	•	•	•	•	2-19 2-58	8 82	10	
Swampscott,	•	•	•	•	• •	•	2-36	15 94	10	
Topsfield, .	•	•	•	•	•	•	2-01	6 38	8	
Wenham, .	•	•	•	•	•	•	3-38	9 64	8	
West Newbury,	•	•	•	•	•	•	2–83	9 0 <del>4</del> 6 76	8	
Average,	•	•	•	•	•	•			Í	_
							8.002-57	89 44	9	

## FRANKLIN COUNTY.

			E A	•11	AKDIN	-	OUNII.		
	CITY	OR	TOW	٧.			Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5 and 15 years of age, 1870-71.	Average length of schools in 1870-71.
field, nardston kland, rlemont, rlemont, raine, way, rfield, ing, then, then, roe, tague, ta							\$.003-75 1-76 2-57 3-21 2-85 3-91 3-91 3-91 3-89 2-86 2-61 4-97 2-21 4-48 3-53 2-25 4-46 2-90 4-98 3-22 5-30 3-98 1-79	\$9 85 4 81 4 09 6 22 6 39 9 22 8 19 10 04 5 74 11 18 6 92 9 09 6 85 5 22 6 39 5 80 9 49 6 58 6 30 5 84 7 12 9 17 9 09 10 12 10 12 7 78	Mos. Days. 5 14 6 13 6 5 5 12 7 3 5 19 6 16 7 9 6 5 8 15 6 - 7 1 6 - 7 - 6 1 5 18 6 - 6 16 6 8 8 - 6 10 6 8 6 9
			H	A.M	PDEN	CC	DUNTY.		· · · · · · · · · · · · · · · · · · ·
wam, ndford, nfield, copee, nville, and, yoke, gmeadov low, son, tgomery ner, sell,	•						\$.001-96 1-89 2-79 4-02 4-35 4-13 2-65 2-81 3-26 2-46 3-31 4-57 8-74 3-63	\$5 15 4 88 8 26 8 30 10 43 8 37 4 76 9 64 11 74 5 15 7 38 10 75 6 44 7 35	7 9 6 9 7 10 6 7 9 3 6 1 6 - 9 8 8 7 6 - 6 - 7 1 6 -

## HAMPDEN COUNTY-CONTINUED.

		НА	MPD	EN.	000	NT	I — CONTINU	KD.		
c	ITY	OR	TOW	n.			Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5 and 15 years of age, 1870-71.	A descel assessment	
Southwick.		•	•		•	•	<b>8</b> 001-51	<b>84</b> 09	Mos.	De
Springfield,	•	·		•	·		2-45	16 00	10	
Tolland, .	•	•	•			•	2-03	5 50	6	
Wales, .	٠,		•		•		1-91	5 18	6	1
Westfield, .	•						3-04	14 59	9	
West Springf	ield,			•			8-02	18 92	9	
Wilbraham,	•	•.					2-96	<b>5</b> 98	6	1
Average,	, •	•			•		<b>\$</b> .002-80	\$11 84	8	
			H	AMP	SHIR	E C	OUNTY.		<u> </u>	
							000 04	<b>0</b> 10 10		
Amherst, .	•	•	•	•	•	•	\$.002-84	<b>\$</b> 12 10	8	
Belchertown, Chesterfield,		•	•	•	•	•	4-64 2-61	11 11 6 49	6	1
Cummington,	•	•	•	•	•	•	8-00	5 45	8	1
Easthampton,	٠	•	•	•	•	•	2-40	7 81	9	
			•	•	•	•	2-40	9 98	8	1
Enfield, . Goshen, .	•	•	•	•	•	•	3-49	7 14	6	i
Granby, .		•	•	•	•		8-82	12 26	7	i
Greenwich,	•	•	•	•	•	•	3-86	9 70	6	•
Hadley, .	:	:	•	:	•	•	2-85	7 75	7	1 1
Hatfield,	·	:	•	·	:	•	2-04	6 64	7	î
Huntington,	•	•	•	•	:	·	2-57	6 25	6	-
Middlefield,	-	·		·	•		2-18	5 76	6	
Northampton,		•	-	:	·	•	3-50	12 39	9	1
Pelham, .		:	:	·	:	:	4-82	7 75	6	-
Plainfield, .		•		:	·	:	8-05	7 45	6	
Prescott, .				·	·	•	4-20	10 17	6	
South Hadley			•	•	•		3-44	9 67	8	1
Southampton.	•				•	•	8-46	8 29	7	ī
Ware,					•	•	4-82	8 38	7	1
Westhampton.	, .		•		•		4-20	10 58	7	1
Williamsburg,		•		•	•		2-20	<b>5 6</b> 8	8	
Worthington,	•	•	•	•	•	•	2-75	5 98	6	
Average,	•	•	••	•	•	•	<b>\$.003-14</b>	<b>\$9 33</b>	7	1
			MI	DDI	ESE	X C	OUNTY.			
ā.							0.000 40	AP 04		_
Acton,	•	•	•	•	•	•	\$ 002-40	<b>8</b> 7 94	6	1
Arlington,	•	•	•	•	•	•	2-76	16 97	10	1
Ashby,	•	•	•	•	•		2-44	6 00	5	1

## MIDDLESEX COUNTY-Continued.

c	:IT¥	OR	TOW	M.		Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5 and 15 years of age, 1870-71.	Average length of schools in 1870-71.
d,	•					\$ 003-10 2-21 2-52 1-79 8-08 1-92 2-21 2-36 2-19 2-88 1-93 2-52 2-28 2-76 2-55 3-88 3-78 3-41 4-45 3-59 3-57 2-57 2-57 2-85 3-81 3-91 3-82	\$10 15 8 46 22 53 7 32 10 88 20 31 10 68 13 72 7 39 14 81 6 51 12 59 7 83 9 41 14 35 16 66 8 01 9 02 8 36 7 38 21 21 11 48 8 83 13 65 13 41 8 52 17 67 12 77 8 33	Mos. Days. 7 18 7 16 10 - 7 16 6 10 10 5 6 4 10 - 10 10 6 17 9 6 6 8 6 10 10 10 8 11 7 5 8 8 9 14 8 5 6 19 10 10 10 5 8 17 10 8 17 10 8 10 7
Reading ell,	9g, .				•	2-78 2-78 1-89 3-78 2-26 2-28 2-28 2-90 3-50 2-61 2-98 1-98 4-09 3-47 2-64 3-18 2-50 3-17	22 68 7 86 4 29 12 80 9 57 6 58 18 07 11 07 5 17 7 89 7 84 8 06 9 81 10 18 17 77 15 98 8 44 7 11	9 12 7 15 6 00 9 2 7 8 6 - 10 10 9 8 8 - 8 4 8 15 6 - 4 16 10 - 10 1 9 - 8 8 -

## BOARD OF EDUCATION.

## MIDDLESEX COUNTY-CONCLUDED.

C1	ΤΥ	OR	тоw	N.	•		Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5 and 15 years of age, 1870-71.	
Weston, .		•	•	•			\$ 002 - 65	<b>\$</b> 15 98	Мо
Wilmington,							2-07	7 12	(
Winchester,							2-64	15 20	1 :
Woburn, .		•					2-48	10 47	1 :
•									-
Average,	•	•	•	•	•	•	<b>\$</b> .002-73	<b>\$</b> 18 17	
			NA	NTU	CKE	T (	COUNTY.		
Nantucket,	•		•	•	•	•	<b>\$</b> 004-39	<b>\$</b> 12 21	1
			N	ORF	OLK	C	OUNTY.		<u>.                                    </u>
Rallingham							<b>\$</b> .003-84	<b>8</b> 9 91	
Bellingham,	•	•	•	•	1	•	3-02	6 81	1
Braintree, .	•	•	•	•	•	•	1-36	25 83	1
Brookline, .	•	•	•	•	•	•	8-11	8 56	•
Canton, .	•	•	•	•	•	•	2-11	8 77	1
Cohasset, .	•	•	•	•	•	•	3-30	13 54	1
Dedham, .	•	•	•	•	•	•			! 4
Dover, .	•	•	•	•	•	•	2-49	7 34	
l'oxborough,	•	•	•	•	•	•	3-01	8 63	1
Franklin,	•	•	•	•	•	•	2-52	7 89	١.
Hyde Park,	•	•	•	•	•	•	2-52	15 79	1
Medfield, .	•	•	•	•	•	•	1-50	5 48	
Medway, .	•	•	•	•	•	•	3-68	9 17	1
Milton, .	•	•	•	•	•	•	1-99	21 46	1
Needham, .	•	•	•	•	•	•	3-33	14 51	
Norfolk, .	•		•	•	•	•	4-40	9 01	1
Quincy, .	•	•.	•	•	•	•	3-29	11 44	1
Randolph, .	•	•		•	•		5-04	7 21	ł
Sharon, .		•					1-86	5 96	1
Stoughton,.			•	•			8-31	· <b>7</b> 09	1
Walpole, .							8-80	11 39	1
West Roxbury,		•	•		•		2-11	18 <b>40</b>	1
Weymouth,		•					4-11	10 51	1
Wrentham,	•	•	•	•	•	•	3-62	9 84	
Average,	•	•	•	•	•	•	<b>\$</b> .002–52	<b>\$</b> 12 04	
			PL	YMC	UTE	ı c	OUNTY.		<u>(</u>
Abington, .							8.003-34	<b>8</b> 6 56	Ī

### PLYMOUTH COUNTY-CONTINUED.

		LUI	MUU	111		NI	I—CONTIN	UED.			
CI	ΤY	O R	TOW	N			Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5	and 15 years of age, 1870-71.	Average length of	schools in 1870-71.
							8.002-11	95	67	Mos.	Days.
•	•	•	•	•	•	•	1-93	4	80	7	6 19
y. idgewat		•	•	•	•	•	4-13		64	8	17
iugowai		•	•	•	•	•	3-17	- 8	47	6	15
r, .	:	:	•	:	•	•	3-22			9	_
, .	:	:	•	:	·	:	3-27		21	7	14
m, .	•			•			2-26		27	10	15
		•		•	•	•	1-22	8	54	9	_
n, .		•	•	•	•		2-89	10	64	9	5
le, .		•		•	•		8-50	8	24	6	
. •					•		2-39		21	6	5
eld,					•		8-00		80	8	10
oisett,	•	•	•	•	•		2-24		35	6	-
orough,	, .	•	•	•	•		3-24		07	8	4
Bridgew	ater,	•	•	•	•	•	4-02	8	97	8	10
ke, .	•	•	•	•	•	•	3-18	6	52	8	10
th, .	•	•	•	•	•	•	4-50	12	70	9	9
on, .	•	•	•	•	•	•	3-08		29	6	9
ter, .	•	•	•	•	•	•	2-42		38	7	7
<b>?</b> , .	•	•	•	•	•	•	2-77		21	9	10
Scitu <b>a</b> te,	•	•	•	٠	•	•	2-34		87	9	11
ım, .		•	•	•	•	•	4-00 3-92		40 96	<b>6</b>	14
ridgewa	uer,	•.	•	•	•	•				-	
erage,	•	•	•	•	•	•	\$ 003-34	<b>\$</b> 7	99	8	5
			sı	UFF	OLK	C	OUNTY.				
• .			•		•	•	<b>\$</b> .001-48	<b>\$</b> 19	57	10	16
, .	•				٠.		8-19		-	10	10
•		•		•	•		2-54		12	10	10
op, .	•	•	•	•	•.	•	2-31	11	29	8	8
erage,	•	•	•	•	•	•	<b>\$</b> .001-52	\$19	16	10	14
			wo	RC	ESTE:	R	COUNTY.			·	
nham,						•	\$.003-07	87	41	6	5
				:	:	:	1-95	7	89	7	12
, .			•		•	:	2-35	5	38	6	2
· ·	•	•	•	:	·	:	2-31		51	ě	17
•			•			:	2-40		57	6	15
-	-	•	•	•	•	٠		1 -		1	

<sup>•</sup> Including Roxbury and Dorchester.

### WORCESTER COUNTY-Continued.

OI	Τ¥	O R	TOW	N.			Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5 and 15 years of age, 1870-71.	
Blackstone,							8.003-03	<b>8</b> 6 47	1
Bolton, .	•	•	•	•	•	•	2-25	6 82	1
Bovlston, .	•	•	•	•	•	•	2-82	7 79	ļ
Brookfield,	•	٠	•	•	•	•	3-50	9 01	ļ
Charlton, .	•	•	•	•	•	•	3-06	9 97	1
Clinton, .	•	•	•		•	•	2-74	7 82	l
	•	•	•	•	•	•	3-68	6 62	
	•	•	•	•	•	•	8-67	8 43	
		•	•	•	•	•	4-81	7 02	ľ
Dudley, . Fitchburg, .	•	•	•	•	•	•	1-90	9 98	l
Cardner	•	•		•	•	•	2-11	5 86	l
Gardner, .	•	•	•	•	•	•	8-99	7 20	l
Grafton, .	•	•	•	•	•	•	2-89	8 04	l
Hardwick, .	•	•	•	•	•	•	2-64	8 57	l
Harvard, .	•	•	•	•	•	•	2-04	7 46	l
Holden,	•	•	•	•	•	•	2-80 2-74		l
Hubbardston,	•	•	•	•	•	•		8 90	
Lancaster, .	•	•		•	•	•	1-92	13 12	1
Leicester, .	•	•	•	•	•	•	2-50	10 ,27	
Leominster,	•	•	•	•	•	•	2-84	10 87	١
Lunenburg,	•	•	•	•	•	•	8-13	11 80	1
Mendon, .	•		•	•	•	•	2-57	6 85	١
Milford, .		•		•	•		8-34	6 68	1
Millbury, .	•				. •		8-12	6 19	١
New Braintree,							2-66	11 81	1
Northborough.					•		2-48	11 29	
Northbridge,			•				3-18	6 48	1
North Brookfiel	d.						2-93	6 36	
Oakham, .	•						3-45	8 44	١
Oxford, .		•			•		8-65	8 21	1
Paxton, .	:	•			•		2-40	6 67	
Petersham,		:			•		2-46	7 56	1
Phillipston,	•	•	•	:	•		3-46	6 29	١
Princeton, .	•	•			•		1-90	7 47	١
Royalston, .	•	•	•	•	•	• •	2-06	6 17	١
	•	•	:	•	•	•	8-13	. 6 70	1
Rutland, . Shrewsbury,	•	•		•	•	•	2-40	9 12	1
Sarewsbury,	•	•	•	•	•	•	8-28	9 70	
Southborough,		•	•	•	•	•	8-11	6 37	1
Southbridge,	•	•	•	•	•	•	2-25	6 18	l
Spencer, .	•	•	•	•	•	•			l
Sterling, .	•	•	•	•	•	•	1-80	6 71	i
Sturbridge,	•	•	•	•	•	•	2-22	7 01	l
Sutton, .	•	•	•	•	•	•	2-90	6 55	1
Templeton,	•	•	•	•	•	•	8-46	7 72	
Upton,	•	•	•	•	•	•	8-40	7 83	
Uxbridge, .	•	•	•	•	•	•	2-94	8 06	1
Warren, .	•	•	•	•	•	•	8-15	9 18	
Webster, .							2-82	5 36	1

## WORCESTER COUNTY-CONCLUDED.

CI	T Y	OR 1	ro w	n.			Number of mills to the dollar appro- priated to public schools, on the Valuation of 1871.	Expended for each child between 5	and 15 years of age, 1870-71.	Average length of	In 1870	
							1			Mos.	Days.	
ıgh,		•		•			\$ 002-93		56	7	12	
ston,							. 2-94	5	45	7	_	
kfiel	d,						8-20	- 6	74	7	6	
er,				•			3-29	9	72	6	-	
on,							2-65	8	06	6	9	
, '	•	•	•	•	•	•	2-58	12	84	10	9 5	
ıge,		•		•	•	•	<b>\$</b> .002-65	\$8	73	7	8	-
ges f	or	State,		•	•	•	<b>\$.</b> 002–19	<b>\$</b> 11	<b>7</b> 8	8	9	
										I		

## [C.]

Showing, 1st, the valuation of each town in the Commonwe the year 1871; 2d, the amount of a half mill tax on such val 3d, the amount to be received by each town on a distribution avails of said tax in proportion to the number of persons between 5 and 15 years, according to the returns of 1870-1.

#### BARNSTABLE COUNTY.

CITY OR TOWN.		Valuation—1871.	Amount of a half mill tax.	Amount received by Town.	Amour
Barnstable, .		<b>\$2,450,510 00</b>	\$1,225 25	<b>\$2,380 65</b>	\$1
Brewster, .		661.890 00	330 94	710 16	-
Chatham, .		848,162 00	424 08	1.460 67	1
Dennis.		1.299,988 00	649 99	2.022 88	1
Eastham, .		188,177 00	94 08	317 42	_
Falmouth.	:	1,096,788 00	548 39	1.092 14	ŀ
Harwich, .	:	1.070.850 00	535 42	2,178 90	1
Mashpee, .	:	101,307 00	50 65	156 02	_
Orleans, .		444,624 00	222 81	642 91	ļ
Provincetown.	:	1,876,173 00	938 08	1,982 53	1
Sandwich, .	:	1,305,750 00	652 87	1.977 15	1
Truro,	:	272,131 00	136 06	879 63	-
Wellfleet, .	:	838,516 00	419 25	1.140 56	i
Yarmouth, .		1,384,746 00	692 37	997 99	
Total, .		<b>\$</b> 13,839,612 00	\$6,919 74	<b>\$17,939 61</b>	\$11

#### BERKSHIRE COUNTY.

Adams,	•	\$5,869,256 00	\$2,934 62 148 16	\$5,783 *88	8:
Alford, .	•	296,321 00		215 20	
Becket, .	•	489,895 00	244 94	887 70	
Cheshire, .	•	874,485 00	437 24	973 78	•
Clarksburg, .		244,857 00	122 42	379 29	
Dalton, .		938,632 00	469 31	648 29	
Egremont, .		590,081 00	295 04	470 75	
Florida, .	•	205,037 00	102 51	508 41	
Gt. Barringto	n, .	5,125,484 00	2,562 74	2,431 76	
Hancock, :		480,793 00	240 39	406 19	
Hinsdale, .		855,479 00	427 78	876 94	
Lanesborough	ı, .	766,776 00	388 38	850 04	
Lee,		1,666,141 00	833 07	2,469 42	:
Lenox, .		1,252,823 00	626 41	742 44	
Monterey, .		282,858 00	141 42	406 19	
Mt. Washingt	ton,.	99,330 00	49 66	199 06	

### BERKSHIRE COUNTY-CONTINUED.

	DERKSHILE C		MIINUED.	
TOWN.	Valuation—1971.	Amount of a half mill tax.	Amount received by Town.	Amount of Gain.
ord, .	<b>\$</b> 110,495 00	\$55 24	<b>\$</b> 139 88	<b>\$</b> 84 64
rough, .	872,819 00	436 40	2,016 82	1,580 42
	837,227 00	168 61	532 62	364 01
	197,782 00	98 89	266 31	167 42
	8,541,253 00	4,270 62	6,770 78	2,500 11
	551,414 00	275 70	575 66	299 96
i,	541,272 00	270 63	780 10	509 47
	282,586 00	141 29	486 89	345 60
	1,205,560 00	602 78	1,307 34	704 56
ge,	2,582,545 00	1,291 27	1,080 27	261 00*
n, .	278,261 00	139 13	320 11	180 98
n, .	805,699 00	152 84	449 26	296 42
	929,346 00	464 67	1,108 28	648 61
oridge, .		837 29	1,772 71	985 42
own, .	1,674,595 00 297,053 00	148 52	387 36	238 84
•	291,030 00	140 02	307 30	230 02
• •	<b>\$</b> 38,746,155 00	<b>\$</b> 19,372 97	<b>\$</b> 36,198 <b>68</b>	<b>\$</b> 17,21 <b>7</b> 69
	BRISTO	OL COUNTY	7.	
	\$600,600 00	8300 30	8634 84	<b>8</b> 334 54
ıgh, .	2,848,258 00	1,424 22	3,260 28	1,836 06
ıga, .	817,268 00	158 63	398 12	239 49
h,	1,880,750 00	940 37	1,721 60	781 28
	697,000 00	848 50	796 24	447 74
• •	2,121,147 00	1,060 57	2,098 20	1,037 63
	1,385,788 00	692 89	1,385 35	692 46
,	29,141,117 00	14,570 55	15,674 63	1,104 08
,	650,480 00	325 24	726 30	401 06
• •	850,098 00	425 04	1,248 16	823 12
ord,	22,960,251 00	11,480 12	10,160 13	1,319 99*
	765,625 00	382 81	804 31	421 50
•	1,577,023 00†	788 51	898 46	109 95
• •	795,148 00	897 57	887 70	490 13
• •	618,730 00	809 86	489 58	180 22
• •	883,163 00	441 58	1,065 24	623 66
• •	660,225 00	330 11	683 26	353 15
• •	16,104,869 00	8.052 43	9,336 99	1,284 56
	1,383,900 00	691 95	1,474 12	782 17
	\$86,241,440 00	\$43,120 75	<b>\$</b> 53,743 51	\$11,942 75
	DUKE	S COUNTY.	1	1 .
n,	\$292,013 00 1,234,950 00	\$146 00 617 47	\$282 45 868 87	\$136 45 251 40
	·			

—Total loss for Berkshire County, \$391.98. Total loss for Bristol County, \$1,319.99. ation of Baynham erroneous by a mistake in the returns of the assessors.

#### DUKES COUNTY-CONTINUED.

CITY OR TOWN.		Valuation—1871.	Amount of a half mill tax.	Amount received by Town.	Amo	
Gay Head, Gosnold, Tisbury,	•		\$11,014 00 167,756 00 626,150 00	\$5 50 88 87 818 07	\$107 60 51 11 847 85	
Total,	•	•	\$2,331,883 00	\$1,165 91	\$2,157 88	8

#### ESSEX COUNTY.

•	<b>\$141,015,586</b> 00	<b>\$</b> 70,507 <b>64</b>	<b>\$</b> 103,938 91	<b>\$</b> 3
•	1,020,497 00		1,159 59	
•				
•				
•				
•				
•				
•	22,932,925 00	11,466 46	14,364 60	
	535,628 00	267 81	575 66	
	1,600,820 00	800 41	2,197 73	
	5,195,600 00	2,597 80	3,878 60	
	1,975,526 00	987 76	1,388 04	
	7,091,756 00	3,545 87	6,595 88	
	686,447 00	343 22	581 04	
	5,883,183 00	2,941 59	255 55	
	442,695 00	221 34	626 77	
	1,924,759 00	962 37	1,417 63	
		1,727 32	3,887 05	
		618 22	801 62	
		326 35	833 56	
	,			
	1 -,,			
				1
	_,-,,		3 999 89	ĺ
				İ
•				ł
•	\$2,240,461 00	\$1,120 28	\$2,577 02	•
		. 2,498,246 00 5,708,310 00 835,250 00 1,088,715 00 2,953,100 00 862,838 00 903,875 00 7,487,255 00 798,393 00 476,895 00 1,656,053 00 1,656,053 00 1,8551,848 00 24,885,626 00 652,703 00 1,236,448 00 3,454,650 00 1,924,759 00 442,695 00 5,883,183 00 686,447 00 7,091,756 00 1,975,526 00 1,975,526 00 1,975,526 00 1,975,526 00 1,975,526 00 1,600,820 00 535,628 00 22,932,925 00 1,500,845 00 21,102,873 00 712,283 00 472,475 00 1,028,497 00	. 2,498,246 00 1,249 12 . 5,703,310 00 2,851 65 . 835,250 00 417 62 . 1,088,715 00 544 85 . 2,953,100 00 1,476 55 . 862,838 00 431 41 . 903,375 00 451 68 . 7,487,255 00 8,743 62 . 798,393 00 399 19 . 476,895 00 238 44 . 9,375,800 00 4,687 90 . 1,656,058 00 828 02 . 18,551,848 00 9,275 92 . 24,385,626 00 12,192 81 . 652,703 00 826 35 . 1,236,448 00 618 22 . 3,454,650 00 1,727 32 . 1,924,759 00 962 37 . 442,695 00 221 34 . 5,883,183 00 2,941 59 . 686,447 00 348 22 . 7,091,756 00 3,545 87 . 1,975,526 00 987 76 . 5,195,600 00 2,597 80 . 1,600,820 00 800 41 . 585,628 00 267 81 . 1,768,313 00 884 15 . 1,500,845 00 750 42 . 2,102,873 00 1,051 43 . 712,283 00 356 14 . 472,475 00 236 23 . 1,028,497 00 514 24	2,498,246 00       1,249 12       1,850 72         5,703,310 00       2,851 65       3,418 99         1,088,715 00       544 85       1,067 93         2,953,100 00       1,476 55       3,222 62         862,838 00       431 41       1,000 68         903,375 00       451 68       1,119 04         7,487,255 00       3,743 62       8,382 04         798,393 00       399 19       903 84         476,895 00       238 44       349 70         9,375,800 00       4,687 90       5,826 54         1,656,058 00       828 02       1,538 68         18,551,848 00       9,275 92       13,035 74         24,885,626 00       12,192 81       15,881 76         652,703 00       826 85       83 56         1,236,448 00       618 22       801 62         3,454,650 00       1,727 32       3,887 05         1,924,759 00       962 37       1,417 63         442,695 00       2,941 59       255 55         686,447 00       343 22       581 04         7,091,756 00       3,545 87       6,595 88         1,975,526 00       987 76       1,388 04         5,195,600 00       2,597 80       3,873 60

<sup>\*</sup> Loss.—Total loss for Dukes County, \$32.76. Total loss for Essex County, \$2,800

## FRANKLIN COUNTY.

R TOWN.	Valuation—1871.	Amount of a half mill tax.	Amount received by Town.	Amount of Gain.
	<b>\$</b> 582,6 <b>32</b> 00	<b>\$</b> 266 81	<b>8</b> 575 <b>6</b> 6	<b>\$</b> 309 <b>\$</b> 5
ton, .	424,557 00	212 27	419 64	207 87
l,	581,828 00	290 91	1,078 81	782 40
ont, .	873,835 00	186 66	519 17	832 51
θ,	699,529 00	849 76	841 97	492 21
	830,189 00	415 09	728 99	313 90
ļ,	1,258,643 00	629 32	1,619 38	990 06
	295,891 00	147 94	282 45	134 51
	465,979 00	232 98	328 18	95 20
ld,	2,187,943 00	1,098 97	1,756 57	662 60
	173,259 00	86 62	349 70	263 08
	256,568 00	128 28	295 90	167 62
	348,935 00	174 46	392 74	218 28
	229,284 00	114 64	809 35	194 71
	50,216 00	25 10	110 29	85 19
θ,	1,128,111 00	564 05	1,159 39	595 84
em,	334,316 00	167 15	425 02	257 87
d,	707,945 00	858 97	1,022 20	668 28
	1,102,980 00	551 49	1,067 98	516 44
	178,951 00	89 47	368 53	279 06
ie,	861,619 00	430 80	944 19	518 89
ry,	200,490 00	100 24	293 21	192 97
nd, .	465,232 00	232 61	443 85	211 24
,	226,307 00	113 15	883 56	220 41
	200,768 00	100 38	212 51	112 18
	723,087 00	861 54	449 28	87 69
	<b>\$14,838,594</b> 00	<b>\$7,419 16</b>	\$16,322 92	\$8,903 76

## HAMPDEN COUNTY.

				I	
		\$940,348 00	<b>\$470 27</b>	<b>\$</b> 965 71	<b>\$4</b> 95 <b>44</b>
d, .	.	528,620 00	264 31	602 56	338 25
l	.	643,258 00	321 62	586 42	264 80
	. 1	496,282 00	248 14	648 29	400 15
, .	.	4,064,782 00	2,032 39	4,745 16	2,712 77
э, .		463,931 00	231 96	616 01	384 05
		150,504 00	75 25	225 96	150 71
	. 1	6,640,385 00	3.320 19	5.218 60	1.898 41
dow,		918,155 00	459 07	718 23	259 16
,	.	494,650 00	247 82	626 77	879 45
-		1.207.596 00	608 79	1,457 98	854 19
ery,		152,800 00	76 40	185 61	109 21
,		1,385,094 00	667 54	2,087 44	1,419 90
-		274,989 00	137 49	365 84	228 85
k, .		598,620 00	296 81	653 67	856 86
ld, .		27,551,970 00	13,775 98	11,384 08	2,891 90*
, ,		294,502 00	147 25	809 85	162 10
-	1				

#### HAMPDEN COUNTY-Continued.

CITY OR TOWN	τ.	Valuation—1871.	Amount of a half mill tax.	Amount received by Town.	Amou
Wales, Westfield, W. Springfield,	•	\$366,486 00 5,412,819 00 1,983,978 00	\$183 24 2,706 40 991 98	\$363 15 3,042 39 1,159 49	•
Wilbraham, Total,	•	\$43,885 00 \$55,358,654 00	\$27,679 34	1,124 42 \$37,087 03	\$11

#### HAMPSHIRE COUNTY.

Amherst, .		<b>\$</b> 2,813,464 00	<b>\$</b> 1,406 73	\$1,778 09	
Belchertown,		1,076,676 00	588 33	1,210 50	
Chesterfield,		882,574 00	191 28	414 26	
Cummington,		398,864 00	199 43	591 80	
Easthampton,		2,495,771 (0	1,247 88	2,065 92	
Enfield, .		620,125 00	310 06	406 19	
Goshen, .		143,000 00	71 50	188 30	
Granby, .		501,103 00	250 55	422 83	
Greenwich, .		297,455 00	148 72	277 07	
Hadley, .		1,400,144 00	700 07	1,145 94	
Hatfield, .		1,222,982 00	611 49	1,011 44	
Huntington,		544,484 00	272 24	602 56	
Middlefield,		421,510 00	210 75	462 68	
Northampton,		6,868,433 00	3,434 21	5,226 67	1.
Pelbam, .		207,360 00	108 68	347 01	-,
Plainfield, .		229,260 00	114 63	252 86	
Prescott, .		213,798 00	106 89	247 48	
South Hadley,		1,451,847 00	725 94	1,433 77	
Southampton,		533,329 00	266 66	599 87	
Ware,		1,618,880 00	809 44	2,305 33	1,
Westhampton,		342,400 00	171 20	368 53	-1
Williamsburg,		1,357,826 00	678 91	1,420 32	
Worthington,		862,765 00	181 88	529 93	
Worthington,	•	002,100 00	101 00	020 00	
Total, .	•	<b>\$</b> 25,504,050 00	<b>\$</b> 12,751 97	\$23,308 85	\$10,

## MIDDLESEX COUNTY.

Acton, .	.	<b>\$</b> 968,317 00	<b>\$</b> 484 05	\$817 76
Arlington, .	•	4,148,440 00	2,074 22	1,815 75
Ashby, .	.	496,780 00	248 39	538 (10
Ashland, .	• [	1,288,732 00	644 36	1,059 86
Ayer,¹	.	-	-	· <u>-</u>
Bedford, .		587,337 00	293 66	435 78
Belmont, .		2,431,166 00	1.215 58	734 87
Billerica, .	. !	1,446,158 00	728 07	954 95
Boxborough,	.	247,214 00	123 60	185 61

<sup>\*</sup> Loss.—Total loss for Hampden County, \$2,891.90.

<sup>&</sup>lt;sup>1</sup> Included in Gr

## MIDDLESEX COUNTY-CONTINUED.

ITY OR TOWN.	Valuation-1871.	Amount of a half	Amount received	
III OK IOWN.	Valuation—1971.	mill tax.	by Town.	Amount of Gain.
ghton,	\$8,954,732 00	\$4,477 86	\$2,278 43	<b>90 100 00</b>
ghton, rlington,	497,678 00	248 83	277 07	\$2,198 93* 28 24
nbridge,	46,859,800 00	28,429 90	21,751 84	1,678 56*
rlisle,	887,574 00	193 78	809 85	115 57
arlestown,	31,866,660 00	15,938 33	16,357 89	424 56
elmsford, .	1,551,233 00	775 61	1,240 09	464 48
ncord,	2,094,025 00	1.047 01	1,132 49	85 48
acut, .	1,343,997 00	671 99	1,080 27	358 28
nstable,	289,407 00	144 70	228 65	83 95
erett,	2,423,232 00	1,211 61	1,162 08	49 53*
mingham, .	8,661,570 00	1,830 78	2,001 36	170 58
oton	2,482,730 00	1,241 86	2,014 81	773 45
lliston,	1,759,122 00	879 56	1,788 85	909 29
pkinton,	2,020,882 00	1,010 44	2,894 44	1,884 00
dson,	1,392,741 00	696 37	1,821 13	1,124 76
kington,	2,324,754 00	1,162 37	887 70	274 67*
coln,	659,082 00	829 54	398 12	68 58
tleton,	728,175 00	361 58	548 76	187 18
well,	27,811,353 00	13,905 67	17,315 53	3,409 86
lden,	7,119,058 00	3,559 52	8,811 72	252 20
rlborough, .	8,141,531 00	1,570 76	5,049 13	3,478 37
ynard, <sup>1</sup>	_			0,1.0 0.
dford,	6,351,399 00	3,175 69	3,004 73	170 96
lrose,	2,812,756 00	1,406 37	2,726 98	1,320 61
tick,	3,114,300 00	1,552 15	8,841 82	2,289 17
wton,	19,386,013 00	9,693 00	6,418 34	8,274 66*
rth Reading, .	512,736 00	256 36	478 82	222 46
pperell,	1,111,415 00	555 70	968 40	412 70
ading,	1,850,653 00	925 32	1,471 43	546 11
erborn,	882,325 00	441 16	562 21	121 05
rley,	840,037 00	420 01	823 14	403 13
nerville,	15,775,000 00	7,887 50	6,913 30	974 20*
neham,	2,485,110 00	1,242 55	2,125 10	882 55
w,	764,539 00	882 16	1,041 03	658 87
dbury,	939,290 00	469 64	1,019 51	549 87
wksbury, .	908,415 00	454 20	650 98	196 78
wnsend,	782,481 00	366 21	1,000 68	634 47
ngsborough, .	801,918 00	150 95	287 83	136 88
kefield,	2,830,746 00	1,415 87	1,982 53	567 16
ltham,	7,914,660 00	3,957 33	3,819 80	137 53*
itertown, .	5,598,140 00	2,799 07	2,356 44	442 63*
yland,	629,714 00	814 85	637 53	322 68
stford,	952,778 00	476 38	989 92	513 54
ston,	1,178,450 00	589 22	527 24	61 98
lmington, .	518,509 00	259 25	406 19	146 94
nchester, .	3,404,626 00	1,702 31	1,592 48	109 83*
burn,	7,780,398 00	3,890 19	4,960 36	1,070 17
Γotal,	<b>\$</b> 251,556,838 00	\$125,271 94	<b>\$141,447</b> 58	\$26,288 80
	1	I	1	I

Loss.—Total loss for Middlesex County, \$9,670 53.

<sup>1</sup> Included in other Towns.

## BOARD OF EDUCATION.

#### NANTUCKET COUNTY.

CITY OR TOWN. Valuation—1821. Amount of a half Amount received Amount

	Valuatio	II—1941.	mill tax	•	by Town	<b>L</b>	Amoui
Nantucket,	\$1,822	2,428 00	<b>\$</b> 911	21	\$1,761	95	
		NORFO	ık cou	NTY			
Bellingham, .	<b>\$52</b> 0	,820 00	\$260	41	<b>\$</b> 581	04	
Braintree,	1,983	950 00	991	97	2,369	89	1,
Brookline,	20,879	700 00	10,439	85	2,967	07	7,
Canton,	2,568	3,795 00	1,284	39	2,515	15	1,
Cohasset,	1,895	578 00	947	78	1,226	64	1
Dedham,	5,816	837 00	2,908	41	3,817	11	! !
Dover,	360	,788 00	180	39	357	77	
Foxborough, .	1,496	509 00	748	25	1,460	67	! !
Franklin,	1,586	400 00	793		1,363	83	1
Hyde Park,	5,955	,925 00	2,977	96	2,555	50	
Medfield,	791	528 00		76	594	49	:
Medway,	1,492	,570 00	746	28	1,614	00	
Milton,	5,029	,400 00	2,514	70	1,253	54	1,
Needham,	3,001		1,500	76	1,853	42	3
Norfolk,	454	,057 00	227	02	597	18	
Quincy,	5,345	00 008,	2,672	80	4,131	84	1,4
Randolph,	1,985	,970 00	992	98	3,728	34	2,
Sharon,	804	374 00	402	18	798	93	(
Stoughton,	2,410	,475 00	1,205	23	3,034	32	1,
Walpole,	1,185	,159 00	592	57	1,062	55	
West Roxbury, .	14,226	,300 00	7,113	15	4,384	70	2,
Weymouth, .	4,866	,000 00	2,433	00	5,119	07	2,
Wrentham,	1,104	,602 00	552	80	1,153	96	Ú
Total,	\$85,762	,867 00	\$42,881	84	\$48,541	01	\$17,

### PLYMOUTH COUNTY.

Abington, .		<b>\$4</b> ,186,109 00	<b>\$</b> 2,093 05	<b>\$</b> 5,743 15	<b>\$3</b> .
Bridgewater,		1,843,029 00	921 51	1.818 44	•
Carver, .	.	520,417 00	260 20	521 86	
Duxbury, .	.	1,034,000 00	517 00	1,121 73	
E Bridgewater,	.	1,211,050 00	605 52	1,557 51	
Halifax, .	• i	315,346 00	157 67	317 42	
Hanover, .		838,719 00	419 35	866 18	
Hanson, .	.	458,221 00	229 11	559 52	
Hingham, .	.	2,871,279 00	1.435 68	2,108 96	
Hull,	.	286,087 00	143 04	110 29	
Kingston, .	.	1,036,421 00	518 21	777 41	
Lakeville, .		482,733 00	241 36	551 45	
Marion, .		418.033 00	209 01	516 48	
Marshfield, .	.	767,716 00	383 85	793 55	

<sup>\*</sup> Loss.—Total loss for Norfolk County, \$11,884.85.

## PLYMOUTH COUNTY-Continued.

isett, .	Valuation—1871.	Amount of a half mill tax.	Amount received by Town.	Amount of Gain
orough, .				
	<b>\$</b> 535,148 00	\$267 57	<b>\$</b> 742 44	\$474 87
	2,159,770 00	1.079 88	2,663 10	1,583 22
gewater, .	8,543,719 00	1,771 85	4,271 91	2,500 06
re,	566,120 00	283 06	742 44	459 38
h,	8,223,800 00	1,611 90	3,071 98	1,460 08
n,	292,459 00	146 22	457 80	311 08
er,	496,520 00	248 26	505 72	257 46
•. •.	1,047,447 00	528 72	1,256 23	782 51
cituate, .	852,632 00	426 81	782 79	356 48
m,	998,950 00	499 47	1,681 25	1,181 78
gewater,.	765,838 00	382 61	1,014 13	631 52
• •	<b>\$30,751,063</b> 00	\$15,375 36	<b>\$34,553</b> 24	<b>\$19,210</b> 63
	SUFFOI	LK COUNTY	7.	
	9810 889 550 00	<b>\$</b> 306,331 77	9104 540 60	<b>0101700 004</b>
	\$612,663,550 00 18,344,940 00	6,672 47	\$124,549 69	\$181,782 084
	1,063,500 00	581 75	8,355 14 865 84	1,682 67 165 914
p,	604,584 00	802 29	838 56	81 27
	<b>\$</b> 627,676,574 00	\$818,838 28	<b>\$</b> 183,604 28	\$1,713 94
	WORCES	TER COUNT	r <b>y</b> .	
ham, .	\$976,258 00	\$488 12	\$1,089 45	\$601 83
	2,341,435 00	1,170 71	1,557 51	386 80
	509,605 00	254 80	599 87	845 07
	1,754,468 00	877 28	1,145 94	268 71
	416,200 00	208 10	589 11	881 01
ne, .	2,142,215 00	1,071 10	2,802 98	1,781 88
	534,221 00	267 11	478 44	206 83
	516,900 00	258 45	414 26	155 81
d,	1,113,924 00	556 96	1,164 77	607 81
, ·	980,850 00	490 42	809 69	819 27
	8,045,670 00	1,522 83	2,875 61	1,352 78
	271,869 00	185 93	406 19	270 26
	952,727 00	476 36	1,116 85	639 99
	975,009 00	487 50	1,608 62	1,121 12
g,	11,087,361 00	5,533 68	5,662 45	128 77
	1,799,249 00	899 62	1,743 12	843 50
• •	1,704,500 00	852 25	2,542 05	1,689 80
	1,085,330 00	517 66	1,035 65	517 99
K,				000 45
K,	909,509 00	454 75	753 20	<b>298 45</b>
k,		454 75 481 57	758 20 978 78	298 45 492 21 298 97

<sup>.—</sup>Total loss for Plymouth County, \$82.75. Total loss for Suffolk County, \$181,947.99.

### WORCESTER COUNTY-CONTINUED.

CITY OR TOWN.	Valuation-1871.	Amount of a half mill tax.	Amount received by Town.	Amo
Lancaster,	\$2,185,885 00	\$1,092 94	\$860 80	
Leicester,	1,888,840 00	944 42	1,237 40	
Leominster,	2,825,673 00	1,412 83	1,632 83	
Lunenburg,	695,774 00	347 88	559 52	
Mendon,	641,254 00	320 62	648 29	
Milford,	4,794,496 00	2,397 24	6,445 24	4
Millbury,	1,923,622 00	961 81	2,609 30	
New Braintree, .	590,430 00	295 21	357 77	
Northborough, .	1,210,017 00	605 00	761 27	0
Northbridge, .	1,635,682 00	817 84	2,157 38	1
N. Brookfield, .	1,708,310 00	854 15	2,114 34	0
Oakham,	377,256 00	188 62	414 26	
Oxford,	1,233,355 00	616 67	1,474 12	100
Paxton,	333,450 00	166 72	322 80	
Petersham,	732,370 00	366 18	640 22	
Phillipston,	289,018 00	144 50	427 71	
Princeton,	896,357 00	448 17	637 53	
Royalston,	726,189 00	363 09	653 67	
Rutland,	513,428 00	256 71	645 60	
Shrewsbury, .	1,081,100 00	540 55	766 65	
Southborough, .	1,371,818 00	685 90	1,248 16	
Southbridge, .	2,383,180 00	1.191 59	3,123 09	- 5
Spencer,	2,223,740 00	1,111 87	2,176 21	3
Sterling,	1,108,733 00	554 36	801 62	1 3
Sturbridge,	992,537 00	496 26	844 66	100
Sutton,	1,205,451 00	602 72	1,436 46	
Templeton,	1,099,764 00	549 88	1,323 48	
Upton,	814,488 00	407 24	952 26	100
Uxbridge,	1,698,450 00	849 22	1,743 12	
Warren,	1,427,625 00	713 81	1,318 10	
Webster,	1,700,662 00	850 33	2,410 24	3
Westborough, .	1,994,024 00	997 01	1,831 89	7
West Boylston, .	1,021,170 00	510 58	1,479 50	
West Brookfield.	781,800 00	390 90	997 99	
Westminster, .	850,442 00	425 22	774 72	
Winchendon, .	1,884,000 00	942 00	1,667 80	11
Worcester,	38,141,250 00	19,070 62	20,226 11	3
Total,	\$121,905,942 00	\$61,452 73	\$99,842 04	83

	Veluation.	Amount of a half mill tax.	No. between 5 and 15.	
State,	\$1,497,351,686 00	\$748,675 84	278,249	

<sup>\*</sup> Loss.—Total loss for Worcester County, \$232.14.

# ABSTRACT

OF

HOOL COMMITTEES' REPORTS.



## ABSTRACTS.

### BARNSTABLE COUNTY.

#### BARNSTABLE.

few practical suggestions to parents and teachers seem to be called Few deny the right or expediency of a compulsory support of cation. But there are too many who deny the right to compel atlance. The exercise of the former power is comparatively useless nout the exercise of the latter. The same law of public necessity in both cases. The want of punctuality which reduces the averattendance to 75 per cent. or less, as in some of the schools, is an which demands the utmost rigor of the law. Nothing but sickshould be an excuse. Absenteeism takes the scholar from his s, retards his progress, subjects the teacher to additional labor, deprives other scholars of the advantages which they would othere enjoy. Let the truant law be enforced.

For the Committee.—NATH'L HINCKLEY, Chairman; CHARLES F. GEORGE, Secretary.

#### DENNIS.

We are all of us aware that there are some branches taught in all schools, that require the use of apparatus to be thoroughly undered; and even though the lesson be perfectly learned, the knowledge the pupil must be very vague without such illustration; yet the ekboard is, in many instances, the only thing in the room that can used for any kind of illustration, although a few of the rooms are aished with globes and maps, by means of private contribution. It trust some action will be taken by which each room may have at at a globe and other necessary apparatus.

But one other inexplicable feature in some of our schools on be noticed here. It is that so large a number of those who ou be pupils are not found in the school-room at all, and some of are the very ones who can least afford to lose the benefit of or schools. It seems to us that all argument in favor of the presentem under which our schools are conducted would be superstanted and unprejudiced person is acquainted with both. What then is the cause of the evil of we have spoken? It seems that the fault lies somewhere outsthe school. We are led to believe that it is because education estimated at its full value by parents and guardians; because have not taught their children that if they would win an emine society, they must improve the time in youth in gaining what we better to them than wealth—a good education.

Superintendent .- MOSES BAKER.

#### EASTHAM.

Another evil, to which we can but briefly allude, is the free change of teachers. For several years, districts One and Two not had the services of the same teachers for more than a single We have of late employed several young men, classmates in mouth College, but who serve us but one term, and then a where they can get better pay. As soon as they are fairly introthey take leave of us, and then another set of strangers present eards, and in turn go their ways, and we know them no more. We be so fortunate as to secure the services of acceptable teach both sexes for four or five consecutive years, marked improveme are apt to think would be the result.

School Committee.—HEMAN DOANE, MICHAEL COLLINS, MYRICK CLARK.

#### HARWICH.

We are at present in the transition state from the mixed d school to the graded system or method; and of an attendance of scholars, 587 the past term have had the advantages of the g plan, as far or as well as the schools could be graded under excircumstances.

So far the work has been attended with good results. A lestandard of school accommodations has revived an interest in seducation, both on the part of parents and scholars; and adding the efforts of live teachers, whom, for the most part, we have

ate in obtaining, especially the past term, our schools certainly nt of education are manifestly in a better condition than they seen heretofore,—which is an evidence positively in favor of the which is being made.

ool Committee.—Isaiah Chase, Warren J. Nickerson, Everett Harris.

## MASHPEE.\*

undersigned, school committee of Mashpee, respectfully subeir report of the two schools in said town for the school year of '1, as follows:—

th District.—The summer term of this school has been taught seks by Miss Lucy Tandey, and three weeks by Rev. Lorenzo y, the father of the former. Miss Tandey had to leave her before she had finished her term, on account of a severe fit of its.

whole number of scholars attending the summer school was hree. Average attendance, thirty-one. Under five years of age, over fifteen years, two. Wages of teacher, per week, \$7.50, ing board. Total cost of summer school, \$97.50.

winter term was taught by Rev. Lorenzo Tandey twelve weeks to days, at \$10 per week, including board; making in all, for , \$124. There was also expended for fuel and sawing the and care of school-house, by the school agent, \$12. Expended oks, \$25. Total expense of winter school, \$161.

whole number of scholars attending winter school, forty-six. ge attendance, thirty-two. Under five, none; over fifteen, six. whole cost of school in this district: summer, \$97.50; winter, Total, \$258.50.

ing stated cost and condition of this school, we would say that has been a decided improvement in the government of the winool, and your committee would say, that the change is very able in the scholars paying more strict attention to their studies; that is the case you may be sure of progress.

th District.—The summer term of this school was taught nine by Miss Carrie F. Small, at \$6 per week, board included; the cost of summer school, \$64.80.

ole number of scholars attending summer school, ten. Average ance, seven. Under five, none; over fifteen, none.

ter term taught by Ellery O. Luce eleven weeks and four days, er week, board included, making tuition \$106.20.

<sup>\*</sup> I give entire the FIRST report of this town.—SEC'Y.

Total,

Whole number of scholars attending winter school, fifteen. age attendance, eleven. Under five, none; over fifteen, three. was also paid to S. E. Alvis for fuel and agency over school, for books, \$15; making the whole cost of winter school, \$131.

In concluding our report of this school we would say, the find on the register a large score of tardiness of the scholars. It caused by the neglect of parents in not sending their children to in season, or caring whether they go at all. We hope that parentry and make a new effort to see that their children are in set season, and, by so doing, remedy this evil, the complaint of terms.

The whole cost of school in this district: summer, \$64.50; \$131. Total, \$195.80.

The whole amount paid out for schools in the town for th 1870-71:

North District,	161		-	1.0					85
South District,		4						4	1
School committee, and printing reports,							4		
									-

School Committee .- Solomon Attaquin, Walter R. Mingo, Silas P. Pells

# ORLEANS.

Notwithstanding the committee seek to discharge their duty of bly and economically, there is a certain class who are continually ing, and are always ready to vent their vituperation in a tir abuse against the schools and school committee; one class complete because they do not discharge their duty properly, and another because they do; and some with certain "axes to grind" in the of a daughter, a niece or some other female connection they we engage a school for, or some trader or farmer a cord of wood wish; and if all these various complaints and interests were convite, woe betide the committee-man at the next election.

School Committee,-Joseph W. Rogers, Freeman Doane, Freeman Mayo.

# PROVINCETOWN.

In accordance with a vote of the town at the last annual me the school committee appointed a superintendent of Public S

The committee therefore present and recommend for the consideration of the citizens of Provincetown, the faithful repthe superintendent.

believed that under the present management, the educational is of the town are steadily progressing, and in conformity with lief the committee would earnestly recommend a continuance same.

his end we ask authority of the town to appoint a superintend-Public Schools for the ensuing year, and for an appropriation qual amount of money as last year.

ol Committee .- J. B. BARTER, LUTHER NICKERSON, H. SHORTLE.

ng the spring term fifty-five permits were granted scholars to to school. In most of these cases the parent, and not the child, a party at fault. The children were sent of errands at just the new ought to be in school; or, the child wished to go visiting, a parent thought some recreation was necessary; the poor child t wish to be shut up in the school-room all the time; and so ere spent, the child lost his or her place in the class, became aged, and, by and by, will add another to the dunces' class, a too large from similar causes.

ng the fall term like arrangements were made with the teachers eastern and western schools with very good results. Thirtyrmits were granted to absentees, a very large proportion of were cranberry-pickers. There may be, and undoubtedly are, amilies where the parents feel the need of all the assistance hildren are able to afford, to aid in the support of the family; several cases, concerning which special inquiries have been the amount earned has been so trifling a sum, that it would y meet the extra expense caused by necessary destruction of g, while engaged in picking. One was out of school a week, rned seventy cents; another three days, and earned fifty cents; other three days, and earned only twenty-five cents. It would hat no reasonable parent, who had the well-being of his child v, would be so unwise as to keep children from school for so ecuniary reward. The injury done the children, the mortificaey suffer, caused by losing their position in their classes, is of greater hindrance and loss than the benefits derived from the earned, even if there was no extra outlay to gain it.

question, How shall we secure a better attendance at school? s unanswered. It is said by some that parents should be comby law to send their children constantly to school until they are years of age. It certainly has a very bad appearance on the parents, that the neglect of duty to their children should call y such expressions of opinion; and yet we find it to be one of est prominent themes for discussion at almost every teachers'

meeting that has been held for the past year. Could parents of made sensible of the great injury they do their children by them out of school at such an early age, to labor, or what is far permitting them to stay out of school for no purpose at all roam the street, it cannot be doubted that they would use eve deavor to have them attend punctually and constantly, until had secured at least a thorough Grammar School education. might be done at the age of twelve years, as above intimated. what are the facts? It is a fact, however mortifying it may be there are scholars in our Grammar School to-day, that do not r write as well as they did five years since, when they were me of the Intermediate School. What is the reason of this? because they have been taken out of school to work summers, or is true in most cases, they have been permitted "to close so when older scholars have left to engage in some necessary er ment, to roam the streets with nothing to do, nothing to occupy minds but to "kill time." They are found lounging aroun school-room doors, waiting for the scholars to come out at rec intermission, to join with them in their play and sport, but wh bell strikes, they stroll off down on the wharves, or by the she spend their time in throwing chips or stones, or committing nui to the great annoyance of good citizens. These children for dunces' class in our schools, which is a large class, from mere n and nothing else. How long this condition of things shall con is for parents to decide. No one can answer for them.

At the last session of the legislature, a statute law was en making drawing one of the required studies of the Public Sc After Bartholomew's series of drawing was adopted by you for use of the schools, I made some inquiries concerning what they doing in relation to the introduction of drawing into the scho other places. I learned that in some towns they were so fortun to have more or less teachers who understood the subject suffic to commence, while others had taken no action on the matter ever. We are not of that fortunate few who have among their of teachers those who can even make a beginning to teach o And the question arises, What shall we do? Shall we employ suitable person to visit our school and teach drawing; or shall w ploy for a term, more or less, some suitable person to teach our of teachers, and they in turn teach the scholars of the school? opinion is for adopting the latter method, since the teachers, if are called upon to teach others, will give more attention and p themselves more in the art than they otherwise would.

oticed that the school board of the city of Boston had sent to and to engage the services of a competent Professor of Drawing, she in the schools of the city; but as our funds do not warrant following so illustrious an example, we must be content with go the most of our means. In this connection let me say, that it has been made to have vocal music taught in the schools the term; how it will succeed it is impossible to say at the time. My wish is to have both vocal and instrumental music in the schools, but especially in the High School. I think should be a teacher in the High School whose special duty be to teach music, drawing and the modern languages. Such her should have a place among us, and I know of none better d to meet the public wants than our High School; the direct ce would be to build up the school and enlarge its field of less.

erintendent of Schools.—B. F. HUTCHINSON.

## SANDWICH.

day that witnesses the commencement of a hearty sympathy ise cooperation with the teacher and his work, among the s in the home circle, will witness the dawn of an era of inl usefulness in our Common School system. It will shake off gs which now hamper its onward progress, and with the new, impetus such cooperation will give to it, will advance far s the realization of the ideal of our prominent educators. Unt day, Normal Schools may be established with corps of effind zealous instructors, Institutes may be held, county convenrganized, and works on the theory and practice of teaching by ds be issued; the effect will be neutralized by damaging influf this indifference. It is like striving to purify a stream by ting one of its sources while from another source it is constantiving increased supplies of filthy water. We will hope for the dawn of that happy day, and each and all doing well the part ssigns to him, will help along the consummation.

ol Committee.-Wm. C. Spring, Charles Dillingham, Charles N. Hinckley.

### WELLFLEET.

most difficult schools we have under our care is the male dent of our Grammar Schools. One reason for this arises from mposition of the schools—the scholars being almost all from hing fleet. Eight months in the year they are on the sea—that type of unrestrained freedom; on board of our fishing vessels, are little democracies, and it is hard to leave off all free hab once, to sit still on hard benches and to submit to study and a drill. Another reason is, our teachers are strangers. It is a school and a new master, almost every winter, and it requires teacher born to command, to maintain the discipline of a school such scholars. It demands the united powers of parents, teacher committee, to make these schools what a school should be. A p whose neighbors at least know that he has no control over his two boys at home, is often finding fault with a teacher because cannot well govern fifty such boys. But if that parent's school suspended from school for disobedience of orders, he general mains out the rest of the term. The excuse is, the school is worth attending. Perhaps the simple truth is, the parent fit easier to find fault than to govern.

School Committee.—T. N. STONE, R. R. FREEMAN, JOHN SWETT, N. P. WILL VESTER HINCKLEY, JAMES T. ATWOOD.

### YARMOUTH.

Irregular Attendance.—There are some things and some p that require "line upon line and precept upon precept." Ar matter of irregular attendance is, especially, one of them. \ ferred to this evil in our last report, and we are compelled to c attention of parents to it in the present. Every parent and gu must see that nothing can be more discouraging to the teac more injurious to the intellectual, and, we may add, oftentimes moral welfare of the scholar, than to allow this irregularity of : ance at school on the part of their children for slight and causes. It is easy for children to manufacture reasons for a from the school-room, if they are so disposed; and it is easy considerate and indulgent parents to yield to their wishes. parent who regards the prosperity of the school and the inter his children, will suffer them to be absent unless for some w and important reason. The time and privileges of childhood : valuable to be even partially wasted in idleness and play. It for a town to build school-houses, procure teachers, raise mon furnish all the means of intellectual improvement when a large ber of the children of that town neglect to improve them, and be hoped that certain parents will give this matter the serious eration which it deserves.

School Committee.-HEMAN B. CHASE, VARNUM LINCOLN, DANIEL WING

# BERKSHIRE COUNTY.

## ADAMS.

years ago we filled our Graded School buildings with the raw from the District Schools in the village. We entered upon system with all the mingled doubts, misgivings, hopes and ions usually attending a radical change. The town had just d one hundred and twenty thousand dollars for two school s, one in each village, in which all the scholars in the villages semble for instruction. This was breaking away from the s established by the fathers, and disregarding and condemnand customs covered with the mildew and moth of age and e, cherished as a sacred trust received from the worthy and e past; and the question naturally asked was, "Will it pay?" hort trial has already fully answered that question, that it n pays,—it pays in unknown and unlooked for ways. One of sipal items is the spirit, ambition and zeal each child has for and proficiency in its several studies, in punctuality in attendl in quick and ready perception of the matter in question. Graded Schools in North Adams the percentage of attendance ast term, was 93 3-10. The percentage of attendance in the District Schools" in the north part of the town for the past 3 77 4-10. The percentage is large on these last mentioned obtained under the many difficulties and disadvantages, the from school, cold and stormy weather, bad roads, and, in most poor school buildings, yet under all these difficulties, so anxthe children to attend school, that they may pass from these nto the Intermediate departments of the Graded School, that rcome all difficulties and oppositions interposed. To the Priolars the Intermediate department is the maximum of their , the Grammar to the Intermediate, the High School to the r, and the graduating class to the High School; thus "grade grade," and ever calls forth the best qualities and highest of the scholars.

Committee .- A. G. POTTER.

## ALFORD.

Twenty-five per cent. of the children, numbered May 1st, ha been members of any of our schools during the year; whi average attendance in all the schools is but little more than fit cent. of the children numbered.

These two facts should be sufficient of themselves to arouse in one of our citizens, who has or feels any interest in society, g education and the rising generation, an earnest inquiry after the or causes of so great a disregard, so criminal a neglect of the b of our Common Schools, so freely and generously placed with reach of every child in the Commonwealth. By some, it is in p counted for, by supposing many of our children to live so distan school that they cannot attend and receive its benefits; but this us no satisfactory cause, for we find many of those children wh most remote from the school-house, the most regular and protheir attendance, and consequently the best and most advanced i education. Others may suppose it is because parents need the se of their children in some useful employment, to aid them in supp the family and procuring the necessaries of life. But this is no erally the case; in fact it is seldom true, for the absentees are we frequently see rambling in the fields, fishing along the brooks, ing where there is no game, and lounging in public places, usel themselves and an annoyance to others.

The true reason, we think, is the too apparent apathy and w interest in and appreciation of the real importance of the schoits privileges by our citizens and parents. Many a parent and treats our schools as of the slightest importance, and is ever rea judge and condemn the teacher and his work on mere hearsay report of an ungoverned child. This is unrighteous judgmen should not be passed until facts are established by personal observ Let such individuals visit the school-room, become acquainted an verse with the teacher. They have a common interest in the sai ject, and their presence from time to time in the school-room no sustains and encourages the teacher, but shows to their childre their sympathies are with him, and on the side of good order ar rect deportment, that they are in coöperation for the child's best est; and in this way their own aspirations are aroused, and the is caused to grow up in the child that it is a pleasure and a pr to attend school, and not an irksome and disagreeable task. Thu may many unjust prejudices be removed, and where there has neglect and disregard may there not be the most perfect dattendance!

Committee.—Henry W. Smith, Lester T. Osborne, W. C. Hinman.

### BECKET.

ducation of our youth does not consist merely in school-book age, but in the ability to act well the part allotted to them in that allotment is very much depending upon their own selected and should be considered of prime importance by all that their children may become useful and avoid those pernibits which idleness is almost sure to beget. What course to with children and youth in order to best fit them for useful ould be a subject of more thought and action with parents. A of usefulness should be a part of their early training. For to toil hard to bring up their children in idleness, is wrong, weater wrong is done to child than to parent.

shall we employ them? Give them something to do where a responsibility. Let some special daily labor be theirs to look if possible, teach them to be useful in that occupation we wish follow when grown up. Constant book-schooling during that a which character and habits are most readily formed, unless efinite object in view in which the scholar is deeply interested, adency to produce a book-worm, or knowledge to the sacrifice trious habits.

MICUS HADIOS.

Committee.—C. O. Perkins, Wm. S. Huntington, S. W. Carter, Orrin Mil-P. Carter, L. C. Robbins, E. B. Richards, F. J. Taylor.

### DALTON.

sing of Teachers.—The committee feel convinced that great ge is derived from the employment of teachers well trained in fession, and, other things being equal, would prefer those who in through the regular course at a Normal School.

annot expect to obtain teachers who have spent two or three such a school, in addition to the usual preparatory schools, at ates as those who have had no special training for this profesthe money at our command has not permitted us to engage teachers for most of the schools, and the demand for them is that we could not have obtained them always, even if ready he highest rates asked.

re well pleased with the results of Normal teaching, and con-

sider the fact of having been educated in a Normal School ommendation for any teacher to bring to any committee.

We are glad to see that one or two of our Dalton girls ar to qualify themselves to teach by a course of training at the Normal School.

Drawing and Music.—Drawing has been taught to a lin during the year, and as it is now required by law to be branches of learning to be pursued in Public Schools, we see it introduced in all our schools, and hope soon to find all prepared to give instruction in the art. Many of our seasily acquire a taste for drawing, and some may evince this direction, which, well cultivated, will be a source of possibly of distinction, in future years.

We are far behind many European nations in ability drawings of machinery and general draughting. It is said all work of this kind in our own country is done by foreig because native skill cannot be obtained. This should be giving our youth equal facilities for instruction in these afforded in other lands.

The governor's message informs us that the study of mu introduced, with marked success, into the Public Schools our larger cities and towns, and that it may be wise to m of the branches of learning required to be taught in our Pu The committee have seen the happy effect produced in o our own schools where vocal music has been taught and prevoid be glad to have it more generally introduced. expect to attain to as great skill in the fine arts as some of have attained to, till drawing, painting and music become monly taught and practised than they now are.

Evening School.—It has afforded the committee much to see an Evening School commenced and carried on winter, for the first time, probably, in the history of the enterprise was undertaken by men employed in factories, lack of early education and desired to remedy this, and instruction for younger operatives who were unable to schools, except for the brief term of three months, provid by the statute law of the State.

The town authorities were glad to do all in their power laudable object, and gave the use of a room in the town he evenings of every week, putting in desks for the benefit of they would have been willing to do more; but with a condetermination to help themselves, the scholars preferred to other things at their own expense. The school has been we

est, and we think it has been productive of much good. The nittee observed, in visiting the school, that the scholars made advancement in writing and arithmetic, and understood that had done well in other studies. We thought proper to show our existion of their efforts by distributing prizes to the best scholars, as same manner as at our other schools. Should the school be nued next winter, we would be pleased to have the town give it tragement and support.

shool Committee.—Oliver Bliss Hayes, Abel Kittredge, Henry M. Parker.

### EGREMONT.

the showing of the registers there is evidently a want of intern the part of parents in our Public Schools. In District No. 1, n individual, except the committee, has visited the school during whole year; No. 2, do.; No. 3, several visits are recorded, only of which is by a parent; No. 4, a few visitors, no parents; No. 5 s only two parents, with quite a number of friends of the teach-Now this certainly is wrong. In order to secure the greatest ant of good for the child, the parents must manifest their interest eir children, in the teacher, in short in the cause of education, by ent visits and careful attention to the means and methods oyed by the teachers to promote the mental and moral culture of e committed to their care. The benefits arising from thus visiting chools are greater and more numerous than at first appear. First, pathy will be established between parent and teacher. (Of this elet there certainly is a lack.) Few persons who never have taught ze the labor and patience required to control the wills, to gain the ect and affections, and to improve the minds and morals of from ty-five to sixty scholars of different ages, temperaments and under rent forms of home government. Second, the teacher and scholars both stimulated to more earnest efforts to excel, and thereby re the approbation of their friends. Third, a more perfect underding between parent and teacher will result. This I consider an spensable prerequisite to success, and can only be obtained by liarity with and a knowledge of the teacher's school-room qualities qualifications.

chool Committee.—George Gardner, S. L. Sheldon.

### HANCOCK.

would be well for this country, if the school laws were like those termany, and as rigidly enforced. There, every child is obliged

to attend school regularly for a prescribed number of year prevented by sickness, or some physical inability. Here, it cases, children are allowed to go to school if their inclination them there; if not inclined to go, they are allowed by their we too indulgent parents to remain at home, or attend the street where they readily learn profanity and other rough accomplisi

Nothing is more trying to a teacher than the irregular atten scholars at school; they get behind their classes, lose what passed over during their absence, prove a hindrance to the oth obtain a very imperfect knowledge of their studies themselv are constantly hearing of parents who have such children, exc that "the teacher is not fit to teach school"-because their do not learn. And the fault in most cases is on the part of the and children. It seems to be natural to most parents to see in their own children, while their eyes are ever open to those people. A person, to accomplish anything, must do somet himself. No reasonable parent can expect children to advance and thoroughly in their studies, who attend school irregula are not inclined to study, and in case of any slight correction teacher, for disobeying his reasonable requests, are upheld by their disobedience. This state of things is constantly occur our schools throughout the country. And these children, wi arrive at years of discretion, usually repay such parents to their

School Committee.-WM H. HADSELL, E. C. GOODEICH, HENRY BARKER.

### HINSDALE.

A law was passed by the legislature last winter, so as to drawing among the branches of learning required to be tang Public Schools, and we are of opinion it will add very mucl interest of our schools, if properly taught. If every boy and our schools was obliged to spend as much time in learning to in learning to spell, at the same age that they learn to spell, not only benefit them, but it would prove of pecuniary adva our community. Upon this point we give a statement which the subject in its true light. A gentleman in fitting up his r had frequent use for a carpenter. The work to be done various alterations and changes to suit special wants, and no li and materials were wasted by the continual mistakes and mi tions of the various workmen employed. At length a works sent, who was a German, from the kingdom of Prussia. Afte ing attentively to the orders given, and doing what he could to stand what his employer wanted, Michael would whip out his two or three minutes, with a few rapid lines, would present a of the article, or work to be done, so clear that any one could lize it at a glance. Michael was not really more skilful as a carthan the many others who had preceded him. But his knowled drawing, gained in a Common School in his native country, his services worth from fifty cents to one dollar per day more my other workman in the shop. He was always in demand and a received extra wages." Now what was true of Michael in try, would be equally true of any other kind of mechanical labor.

# LANESBOROUGH.

as been apparent to us and many of our citizens, and the attenf the town has often been called to the fact, that the standard of
rs has been quite too low, but the committee feel that there has
great gain in this respect during the year past. Three Normal
stes and one graduate from one of the best private seminaries in
suntry, with other experienced teachers, have been employed sucly, and have conclusively shown that teaching is a science as
an art, not to be attempted by every youngster who has masor partially mastered the multiplication table; that it requires
ed and disciplined mind to train and discipline and mould tennds of children, to make them strong and vigorous, morally and
lly, and lay a foundation on which to build their future structure
weledge and usefulness.

teaching has been very successfully practised in most of the sto some extent, and the result shows a decided improvement rest as well as advancement on the part of the pupils. Especially the case in English Grammar, where a text-book has seldom sed by the pupil, and a greater interest in and a love for the has seldom been manifested by young scholars.

ect-teaching has been much more practised in some of our schools, and without text-books, with marked interest and success. Mappy has been successfully taught in connection with the study of phy, and the committee is of the opinion that there is no surer a child to obtain a correct knowledge of geography and at the ime to obtain the mental discipline desired by study.

al music has been introduced into some of the schools, not as a but as a pastime and a means of moral culture, with marked a, and we earnestly wish every school in town could have the and pleasures derived from this accomplishment.

ol Committee.-Wm. A. FULLER, JUSTUS TOWER.

## LEE.

We desire to call attention, in this connection, to the Act p the legislature of Massachusetts in 1870, requiring that drawin be taught in our Common Schools. We are glad to notice this movement, and shall direct the teachers to comply with the It is not expected that we shall make skilled draughtsmen of the but to turn their attention to the forms of objects, to train to accuracy, and accustom their hands to draw straight and lines, and give the general outline of any object with which familiar. This is not so difficult a task as many suppose. Us who have grown up without any practice, may find some to giving an accurate outline of so simple a thing as a shoe-box, dren quickly catch the art, and they will find it of great use it call business.

The American system of Public Schools is based upon the that intelligence and virtue lie at the foundation of republican tions. If this principle is correct, and that it is all history then it follows that the State is under obligation to furnish a tion to every child. The life of the government depends faithful carrying out of this principle. The American system Schools originated and has been developed, not solely from a lent purpose to educate and consequently to benefit the children of the childr poor, but also with a reference to the preservation of the government. itself. On this principle property has been taxed and scho been established in all the free States, and the system is grad tending itself among the States that have recently been recon The taxation of the childless for the education of the children people seems at first thought an injustice, but when we cons all are in one boat and that the safety of this boat depends skill of the crew, we must conclude that we are all intereste education of those who man the ship.

We can never cease to be grateful to the founders of this seemed Public Schools, nor to admire the wisdom of the general plandadopted by the Plymouth and Massachusetts colonists. It has mended itself to posterity that wherever we find the descent the Puritans there we find free schools, and indeed the true does not emigrate to any country where his children and the neighbors cannot be educated together in the Public School eminently a democratic system. The rich and the poor here a common platform, and we hardly know which are the most ed by the contact, the children of the poor or the children of

latter are more refined, the former have more strength, and by g in contact an equilibrium is produced and the deficiencies of he are in a measure remedied by the virtues of the other.

a not what children learn at Public Schools from teachers and that alone makes them valuable. We know no place where comense and human nature are more effectually taught than on the rounds of the Common School. Children are cute readers of eter, and know each other far better than teachers know their puon the play-ground the true character comes out; and the conare sure to be pricked till their conceit escapes, the proud are ed, the modest are encouraged, and all fictitious distinctions of are abolished. If the teacher knows how to keep up the more of the school, the vices and follies of the more degraded portions a frowned down by the public sentiment of the scholars more hally than by any laws and penalties.

isms of the various religious sects are modified by the children educated together. Man is a religious being, and we glory in et. Religion is that which binds us to God, and is designed to us God-like on earth, and finally to fit us for heaven; but the e is we make our religious platforms too narrow. We want all o think and act in the same line in which we think and act, and is nothing more contracted nor more contracting than the shibof sects. No man can honestly say that the only road to leads by Rome or Geneva, neither is all truth confined to Mayor Oxford. Our country is the habitat of all the various Chrisenominations, and has specimens of almost all the pagans of the and will rue the day when it decides to aid in the establishment tarian schools. The waste of money on such schools is the least evils to be feared. How shall we ever be able to amalgamate homogeneous nation all these sects, if we educate them apart? phesion which now exists is due in no small degree to the fact our Public Schools children of different religious persuasions together and their narrow prejudices melt away by social con-The Protestant learns that the Romanist is not altogether "a f sin," but has noble aspirations, warm affections, and good prinand the Romanist learns that his heretic companion belongs to man family, and is not to be treated as an outcast. Even the nen Chinee" is found to possess many virtues which his Christian nions would do well to imitate.

th as we admire our Public School system, we do not suppose it ect. It has made great progress since it was first established, ere is a margin for still further improvement. Whosoever will the legislation of Massachusetts on the subject of schools cannot

fail to notice the upward tendency of the system. In the f mon Schools little was taught besides reading, spelling and principles of arithmetic. The curriculum of studies has been increased in these lower schools, and Grammar, High and Schools have been engrafted on the system, so that our Publi now furnish in our cities and larger towns better facilities i tion than the Academies and Private Schools have ever done the old-fashioned incorporated Academy is a pretty much ol stitution in New England. A few that were largely endowed at Andover, Wilbraham and Easthampton, still flourish, great majority have coalesced with the free High Schools. to see the system still further improved, so that our small to reap similar if not equal advantages with larger places. Ed just as essential in the country as in the city; among a spa population, as in the more crowded village. It is very obv while the Public Schools of the cities and large towns have and are now on such a high grade that the first citizens prefe their children to them rather than to Private Schools, the tricts have not made equal progress, and in many places are ing. It may not be practicable to establish High Schools small towns, but they can be extended much more largel present, and Graded Schools can be established everywhere. ject in abolishing the district system and placing all the scho care of the towns, was to secure these Graded Schools; but t tion, like all revolutions, has encountered much opposition fi rance and prejudice, and most of all in those places where the was most needed. We know that many noble men have been in the District Schools of our smaller towns; but the world n if these towns know what is for their good, they will not privilege which the legislature has granted them of establishing of a higher grade than the old district system ever contempl

School Committee.—Alexander Hyde, Abthur Gilman, N. W. She Hurlbut, Geo. E. Callender.

### LENOX.

Four or five good schools, including two departments is and continuing under the same teacher through the year, succession of years, would meet the wants of nearly all or tants, or if it should appear that more are needed, more our provided. Our aim should be not merely to satisfy the requof the law, but to make the best possible provision for the of our children. The care and improvement of our farms, or

plements of husbandry, our bridges and highways, are imporbut it is still more important to furnish our children the best for becoming intelligent, reflecting, independent men,—men ng their rights and duties and capable of fulfilling the special in which they may engage, with honor to themselves and for odd of others. Our temporal success, our highest happiness and vement through life, depend upon habits of observation and ren, of punctuality, industry, accuracy and thoroughness, which, y are not formed in early years at school, will never be formed, e should consider nothing too costly that may encourage and our children in acquiring them.

the High School, we are happy to speak in terms of unqualified endation. We have abundant evidence of the indefatigable ry and application to his work, as well as of the thorough and te scholarship, of the instructor. We have thought it expediadmit a number whose qualifications were much lower than ould have wished. We trust that ere long applications from as have learned well all that is taught in the Grammar Schools e so numerous that there will be no room for any others. l to the diligence and punctuality of the pupils in general, has been nothing more to be desired. Absence, except for sickor other unavoidable cause, has been almost unknown, the whole er of pupils during the last term having been 43, and the avertendance 42. In this respect, certainly, we cannot hope for any vement, and in every point of view we are persuaded the school illing the best wishes of its friends, and exerting a most favorafluence in the educational interests of the town.

hool Committee.—J. FIELD, W. M. CLARK, J. F. MORELL.

#### MONTEREY.

as once, at least, during the term. The effect will be apparent increased interest manifested by the pupils, and it is a duty owe to your children, yourselves and your country. Visit the ls, and give your children what will be worth more to them all the wealth you can bequeath to them; that is, a good education in a free, enlightened and Christian State is contly a subject of the highest moment. How can the diamond I its lustre from beneath encumbent rocks; and how can man be igent, industrious and enterprising, without the culture and distent of education? We will waste no time in painting to you the ched condition of many of our school-houses; we have done this

from year to year, but our labor has been fruitless. If the parents could be compelled to spend a winter in these school-houses where their children are required to spend their childhood days, it is all that would be required to arouse a determination in them to have better school-houses and school accommodations.

Chairman School Committee .- A. B. GARFIELD.

## MOUNT WASHINGTON.

The attendance the past year has not been what we could wish, although much better than during former years. An irregular scholar is a hindrance to the school, as well as an annoyance to the teacher. No scholar should be kept from school for a trifling cause. The Public Schools of Massachusetts are not merely a privilege which the citizens enjoy. It is the imperative duty of parents to improve every opportunity to educate their children; and in order to do this properly, it is necessary that they be punctual at school. It is also the absolute right of every child, born in this land of free schools, to receive as good an education as is possible in the circumstances in which it is placed.

School Committee .- ORBIN C. WHITBECK, LUTHER H. PATTERSON.

# NEW MARLBOROUGH.

To a limited extent the committee have further availed themselves of the discretionary power accorded them by law, of expending money for maps, globes, etc.; but our school-rooms are still sadly deficient in these necessary articles. It would undoubtedly be well to expend a fixed sum annually until this want is supplied. Teachers need tools to work with, and without them cannot do justice to themselves or their pupils. As well think of carving a beautiful statue with an axe, or painting a delicate portrait with a white-wash brush, as of securing a first-class school in a room whose only furniture is a seven-by-nine blackboard. In accordance with the law thereto relating, we have furnished "drawing cards and copies" to the schools throughout the town. The study seems to be a favorite one with a large majority of the scholars, and we are convinced is of great practical value.

Believing that the common practice of having but two terms in a school-year has in many instances proved detrimental to the best interests of all concerned, we have ventured to make a partial change. In the Centre and Mill River schools, the plan of having three terms in a year has been inaugurated, and promises good result. Should

the change prove, as we think it will, to be an improvement, it may with advantage be extended throughout the town.

Chairman.-H. D. SISSON.

### PERU.

The number of schools in town can, in our opinion, be diminished without detriment to the scholars. We can thus lessen our expenses, have longer school terms, and improve the character of our schools. In very small schools the pupils seldom exhibit much enthusiasm or ambition for study. They seem to require the stimulus of example and numbers. A teacher can as easily manage and instruct a school of twenty-five as twelve. And the expense of educating a pupil in the smaller schools is double the sum expended for a pupil in the larger. As long as we maintain so many small schools, we cannot do justice to the young, without greatly increasing our school appropriations. Three teachers would easily perform the duties of the six, thus enabling us to continue our schools nearly twice as long as during the year past. The principal objection that could be urged in opposition to diminishing the number of schools is, that the distance would be too great for the children to walk. After the confinement of scholars for hours in a close or heated room, active exercise in the fresh air is imperative, to counteract the otherwise pernicious effects. It is the judgment of your committee that the walk necessary would, in most cases, be no more than a healthy exercise for the pupil. case as well as distance that a person can walk are mainly dependent upon practice. If we excel our ancestors in some respects, we have greatly degenerated in this. Our usefulness and happiness depend upon a healthy physical system, and if by the plan suggested the young shall be invigorated, while their intellectual training is in progress, a twofold advantage will be attained. The amount saved from the present expenditure for teachers, fuel, &c., thus permitting longer school terms, would amply compensate for the trouble of conveying the pupils to the centres, where the schools may be established. Perhaps this is impracticable; nevertheless it will be well for us to consider this subject in all its relations.

We congratulate our citizens upon their refusal to return to the old district system. In the judgment of your committee, to have done so would have been an advance "backwards." And the present is not the age for retrograde movements in any matter pertaining to our educational interests. Complaints are made that the new system abridges the rights and privileges of the citizens. But we do not so regard it. The schools are as completely under the control of the

people as when the old system prevailed. You elect your ow mittee, decide where you will have your schools, and make apptions for them. The authority and power of the committee as before, with the additional duty of taking charge of the property and securing the teachers. The constant trouble as apprehension arising under the old system, between the pre and general committees, is obviated by the new law. Some me that the new system is adapted to cities and large towns, but ous to small towns. We only say we do not perceive any did in its application to large or small towns, nor are we in posses any facts that justify such a conclusion.

Reading is the basis of every study, and therefore ranks firs portance. No one should aspire to become a teacher who read well. Can a person teach what he does not understand l No applicant should be approved who does not read understan and so be able to lay the foundation for correct and impressi ing. At the commencement of each term we have urged t structors the importance of giving more attention to this bran very satisfactory results have followed. The habit of reading monotonous tones, or rapidly with indistinct utterance, has, in degree, given place to a more full and distinct enunciation, w able regard to inflections, emphasis and pauses. So numerous studies now introduced into our schools, that some of the m portant ones, as reading and spelling, are too much neglected. may be reading enough, but the pupils are not thoroughly "James, you read too fast." James hears, but the habit is fir when his turn comes he reads as before. The teacher does no the criticism is forgotten, and James reads on to the end of t without improvement. The teacher should say, "James, you rapidly; it is a very bad habit, and must be broken up. We gin now. I will read the sentence first, then you read it as The teacher reads; James reads. "I will read it again; then y and see that you read it slower." There is decision in her man voice. James perceives it. This time he tries, and succeeds of This, followed rapidly for a short time, and the work is done. the school season is past, the young must rely chiefly upon for general information, and if they have failed to become go ers at school they rarely acquire a love for reading thereafte suggest that the committee, at the commencement of each te that prominence to this most useful and desirable accomplish importance deserves.

Chairman of Committee.—C. S. ROCKWELL.

### PITTSFIELD.

ervision of Schools.—It has been remarked, by the superintend-Public Schools of Boston, that the most imperfect part of the tional system of Massachusetts was found in the supervision of hools. In all departments of life, where there is much labor to formed, supervision is almost always indispensable. All classes uple need some controlling influence to guide them. The scholar he teacher both need it.

members of your committee, being more or less absorbed in ess, or burdened with the cares of professional life, find it almost sible to attend to the details of labor demanded by the increasportance of our Public Schools. There is an evident necessity ploying some person whose duty it shall be to have the special f all the schools, and attend to the multiplied wants growing our school system. We have twenty-two school-houses, need-instant looking after as to cleanliness, conveniences and repairs; inploy forty-two teachers, and there are nearly two thousand are in the various departments; there is a large amount of deofficial work to be performed; the expenditures are large, and other department of town affairs should we expect to employ sook after so many persons without a competent officer at the head. It committee would respectfully suggest that authority be given appointment of superintendent of Public Schools.\*

mmittee.—A. N. Allen, *Chairman*; C. B. Redfield, John Tatlock, Owen Coogan, Plunkett, John E. Merrill, Gardner T. Barker, 2d; John M. Brewster,

### STOCKBRIDGE.

thowever much we may differ about the management of our ls, and notwithstanding some may think there is not and cannot y improvement made, yet we think there is an increasing interanifested in our schools by the parents and friends of the children attend them. Our school registers, and our annual examinations, a larger number of visitors the past year than ever before. This encouraging sign. Heretofore, the apathy of parents has been thing quite surprising; and it has been, and now is, one of the obstacles to the improvement of our schools. When parents come to the conviction that the correct education of their chilis a duty that cannot be neglected, transferred or avoided, we

am happy to be able to say that this recommendation was promptly responded to by sice of a Superintendent.—Sac'y. shall have fewer complaints of truancy, tardiness and irregulattendance; and an impetus will be given to the cause of education among us, such as we have never before witnessed, which we can scarcely have any adequate conception. Let then, with gratitude and delight, any indication, even the slight the "good time coming."

Your committee are sorry to mention that, notwithstand liberal policy which the town has pursued during the last fiv towards our schools, there are quite a number of children wh some cause, do not seem to reap the advantages which such a should certainly bestow. In all our villages, and perhaps in oth of the town, it is believed there are some who do not attend s all; or, if they do attend, attend so irregularly as to derive little benefit from the schools. This ought not to be. One idle, vicio roaming the streets, while his companions are obliged to attend exerts an influence whose consequences for evil can scarcely puted. We have truant laws which are believed to be efficie we choose every year truant officers to see that those laws a cuted; but, notwithstanding these, it is a fact that numbers young are growing up in our midst in comparative ignorashould they ultimately fall victims to vicious habits or practiresponsibility in the premises could not be considered a matter consequence. The school system of Massachusetts has recent pronounced by a distinguished Englishman, who visited this during the last summer for the express purpose of examining t cational systems of the country, the best in the world; and, we may so consider it, if we see to it that its efficiency be no ened by our neglect to enforce those rules and regulations wi obviously intended to maintain and strengthen that efficiency we would, therefore, recommend to those who may be sele truant officers for the ensuing year, that they see to it that all dren of the town attend school, for the time at least which requires.

Williams Academy and High School.—When the town first an appropriation to maintain this institution, it was deemed doubtful experiment. Fortunately, however, our favorite town Mr. Canning, was prevailed on to take charge of the school, as that moment its success was assured. He continued in that until the close of the last summer term, when, very unexpected much to the regret of all his pupils and patrons, he resigned. taught in the same place upwards of twenty-five years, and brown his work a ripe scholarship, fertile imagination, and such person ities as greatly endeared him to the many hundred pupils when the same place is the same place upwards of twenty-five years, and brown it is so greatly endeared him to the many hundred pupils when the same place is the same place upwards of twenty-five years, and brown it is a greatly endeared him to the many hundred pupils when the same place upwards of twenty-five years, and brown the sa

l by his instructions. He will long be remembered by them for ering inspirations to them in their student life.

ng the year, we have succeeded in establishing a course of both English and classical; and, in spite of the many difficulties threatened such an attempt, it has been completely successful. spil, now, may be regularly fitted for college, and at the comof either of the prescribed courses will be entitled to a graduitploma.

r committee desire that the matter of a regular course of study High School should commend itself to the consideration of all ople of the town. Our impression is that no school can really ed a High School without this feature. At any rate, it can o distinctive character as such. It must be borne in mind that school is designed to meet the wants of the community at large, t to accommodate the peculiar wants and views of a few. Moreis quite evident to any one conversant with our schools, that ne pupil shall study is second only in importance to the manner th that study shall be pursued, and that he needs guidance and on as to one as much as to the other. Desultory study can acsh but little in disciplining and developing the intellectual , and therefore some course, and, if possible, that course of training which will best fit our youth for the active duties of ould be adopted. It may be that in some individual cases a defrom the prescribed course of study is desirable; but it should erally understood that when a scholar enters the High School l select one or the other of the prescribed courses, and pursue termination, or confine himself to it so long as he remains a r of the school. It has been well said, "that the teacher who control the course of study of his pupils, finds it much more t to discipline and govern them. The conduct of a scholar who definite plan or course of study before him, and does not feel essity of devoting a particular time to a particular thing, will a general thing, submit himself so readily and implicitly to the ne of the school as those to whom such independence of action ility of chance are not allowed." And with no definite object him, and the associations of no class community of study to m, the attachment of the pupil to the school will be but slight, best, he will regard himself as temporarily attached to it, and o dissolve his connection with it at any moment.

of Committee.—Jos. R. French, M. Warner, E. S. Curtis.

# BRISTOL COUNTY.

### ATTLEBOROUGH.

The committee feel a good degree of happiness in subminantial report to the town, so favorable to the schools. It found the High Schools maintaining the reputation heretofor and continuing to accomplish the purposes of their establish a far higher degree than could be even reasonably anticipative consider some of the obstacles in the way of successchools are unfavorably located, the one at the north occupy ventilated room, with capacity altogether insufficient for its a dation, while that at the east is forced to hold its sessions in unsuitable apartments of a manufactory. Under the circumthe results of the experiment have been gratifyingly successwe feel encouraged to look forward to the future of our High as indeed most hopeful, when we remember the more auspic dents of the present as contrasted with those of the immediates.

At this point the committee cannot refrain from urging the in some localities to remove as speedily as possible certain old structures too long used as school-houses, but calculated be places of torment. Let all these depart, so that those v known them, "shall know them no more forever." "Wha there of you, whom if his son asks bread, will he give him Or if he asks a fish, will he give him a serpent?" Let ou afford their children the very best means and appliances of a finished education. And none can mistake the great ad possessed by those occupying large, modern, well-constructe buildings, over such as are confined in small, forbidding, shabb Let parents personally visit the schools and they will find mo siasm, far greater attainments, a high and nobler ambition localities where the surroundings are all right, where the be progress are scattered with a liberal hand. There the best will seek employment, and there also will the perennial frui educational system be found in their greatest perfection. R we commend this subject of suitable school-buildings to th attention of those directly interested in it.

An enthusiastic school will be successful. Where listlessmess and indifference never come; where life, energy and zero

nd, there must be advancement, there must be continued progress and that higher plane above." We would have our teachers other schools, that they may learn to practise new and better ods, or avoid discoverable defects. We would have them befamiliar with the exercises of Teachers' Institutes, for in them schold a field richly decked with golden sheaves of ripened expere and accumulated knowledge. We would have them study fully the Massachusetts Normal system of teaching. And we we, after all, the great and pressing want of our schools is bugh, faithful, Normal teachers. Let us secure these, and we with their advent, enter upon a course of systematic and bugh training of the pupils in every branch of study taught in institutions of learning.

e desire to see improvement in another direction. It appears to committee that our schools should be conducted upon some welled general plan, so that in those of the same grades there shall can existing a substantial uniformity. In unity of purpose and nity of action, the most stupendous events recorded in human ry have been planned and accomplished. In the management be complicated educational system existing among us, can we igthis principle with impunity? "Can we expect grapes of its, or figs of thistles?" As reasonably may we expect these imble results, as look for the best fruits of our toils in the fair fields ience, when they are spent in such ill-advised, incoherent, heteroous efforts as too generally exist among us. Let us have concentrate of purpose, some comprehensive plan of operation, uniformity exiction, and then we believe the best results will be uniformly obd.

e feel called upon to censure in the severest terms a practice, ningly prevalent in some localities, of detaining children away school altogether, or such portions of the term as to render the e thing entirely valueless to such scholars. In one school of attent pupils, the past winter the average attendance has been

In several others, twenty-five or thirty per cent. of those legally led to school privileges have been cruelly and wickedly deprived less inestimable blessings. We look upon the parents guilty of enormities as worthy of being beaten with many stripes. And call upon the inhabitants of the town to cause the laws of our old Commonwealth to be rigidly enforced against this class of inals. Parents must send their children to school. Nothing sickness can excuse them. The schools are established for the ation of all the children; books provided at the public expense in necessary; hence all without exception should be made to par-

ticipate in their benefits. Individual happiness, the public private rights, the laws of the State, all these equally require Finally, let us cherish the schools as our own institutions are teachers as our best friends and our most profitable servants. It town more liberally support and more heartily sustain them, they are continually scattering among us the richest elements of perity, "by impressing upon the minds of children and your principles of piety, justice and a sacred regard to truth; love to country, humanity and universal benevolence; sobriety, chemoderation, temperance; and those other virtues which are the ment of human society, and a basis upon which a republican contion is founded."

School Committee.—L. W. DAGGETT, EBENEZER CARPENTER, Rev. W. B. E. ADAMS, Jr., Dr. F. L. BURDEN, L. L. WHITING.

# BERKLEY.

If these data, as furnished to us by the assessors and by the s teachers, are correct, there are 28 children between the ages of 15 years who have not attended school at all.

In the language of last year's report we inquire: "Whose chewere these, thus deprived of the inestimable privilege of attest school which we provide and desire for all, and of thus qualifying selves for a sphere of usefulness in the discharge of the various of life? Who were those parents so indifferent to the well-beind dearest interests of their children,—so neglectful of duty and sacred discharge of it as to allow their children to absent thems or possibly do the still more culpable act of preventing their at ance? This flagrant violation of parental obligation and of stance? This flagrant violation of parental obligation and of stance should not be permitted, and we hope for the sake of h progress will not recur again." But sorrowfully do we record to appears to have recurred again and in a greater degree than last. There is a serious wrong in this matter. Where does it exist?

School Committee.-Walter D. Nichols, Daniel S. Briggs, Herbert A. De

## DARTMOUTH.

We think the contrast between our schools at the present time those of former years, must be most cheering to every unbiassed. We are happy to be able to state, that parents and others have more attention to visiting our schools during the past year than one preceding, and it has been productive of much good. We much has been gained, still there remains much to be done to see

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ant attendance of all. The frequent visits of parents and guarat the schools, we are persuaded, will tend very much to bring this desired result. A word of encouragement, fitly spoken by or even a kind look, will stimulate the scholar to higher attaint, and make him feel that there are those deeply interested for elfare.

achers' Meetings.—Teachers' meetings were held once a week g the past winter, with a decided improvement over those of ear. We find that united action, on the part of any consideraimber of persons laboring for the accomplishment of the same se, is almost surely productive of better results than can otherbe attained. This is particularly true in regard to the work of eacher. The associating together of teachers for the purpose of ng a deeper interest in our schools, must necessarily tend to elehe standard of education. Much interest was manifested on the of most teachers to attend them. Different topics were brought discussion, and all took an active part in them. Much interest vinced on the subject of good reading. The committee, in visschools, found the most improvement made in those where the ers were constant attendants of said meetings. During the short they have been established, we think much good has resulted rom, and it is to be hoped that that which has been so auspiciously may be successfully continued.

e Graded School.—There was only one school at South Dartn for the spring term. Sarah H. Sanford was appointed principal,
nizzie E. Matthews assistant. The school was then graded, and
h R. Marble, from Rhode Island, was appointed principal of the
grade for the fall and winter terms. The school was a very sucl and profitable one,—a credit to this or any other town. We
now obtaining some of the benefits of the new system.

col Committee.—Job S. Gidlby, John T. Faunce, George W. Francis.

#### DIGHTON.

history of our schools for the introduction among them of the d system. The schools in the other parts of the town are so and widely separated, that the system has been established only a villages at North Dighton and South Dighton. A Graded I was opened in North Dighton in May last, and one in South on last September, the new school-house in that village not being seted until the middle of the summer term. Though the Graded Is have been in existence for so short a period only, they have

abundantly proved their superiority to those which they This superiority is manifested in the greater efficiency of the and in the increased interest of the scholars. The labors of ers have been far more effective, owing to the fact that while ber of scholars is no less than formerly, the number of classes diminished, the classes themselves being much larger. Under system, scholars of all ages and degrees of proficiency bei same school, even when the pupils were few, the classes w very numerous; so that it was almost impossible to hear the ing school hours. The increased efficiency of the schools also partly to the increased interest taken in them by the The larger scholars, being separated from the smaller ones, as ing a school of higher grade, feel a pride in it never before m They study better, and behave better, being ambitious to do themselves and their school. Their parents and friends exhibited an interest in the schools which was never before s may add that the expense of the largest of these schools South Dighton—has been less per week than under the o Upon the whole, we claim that the graded system has been a ful, that every one who desires the improvement of our scho consider its abandonment a very long step backward.

These Graded Schools, we may also add, have not been re their advantages to the children in their vicinity, since schol other parts of the town, qualified to enter their upper dep have been permitted to do so. To some extent they hav themselves of this privilege, and there is no doubt that it wi and more highly prized, as the superior advantages of a Grad are more widely and justly appreciated.

There is no other period of the year so favorable, both fing school and for study, as the fall months. They are more any other portion of the year from those prevailing sickre complaints which very frequently in the winter keep manifrom school. Thus the practice which has been adopted in of keeping the schools during the hottest and coldest perion year, and omitting them during the fall, is not in the judgm committee a wise one. They propose, therefore, to have a smer term, and to begin the schools early in the fall.

School Committee.-E. DAWES, C. W. TURNER, J. SHOVE.

### EASTON.

It will be seen by the table appended to this report that the of terms has been increased from two to three. This because

cause by the increased appropriation of last year it was possible e thirty-three school-weeks, being an increase of seven over the pefore. The advantages of three short over two long terms exerfully summed up in the school report of last year, and have proved by actual experience. Much satisfaction has been excluded concerning this additional number of weeks of school, and shool committee recommend that the appropriation for the compart be so far increased as to allow thirty-six school-weeks each or three terms of twelve weeks each.

subject of truancy is an old and tiresome one, and would not een introduced into this report were it not that your committee se some practical measure to counteract this evil. In North there have been several cases, during the past year, of truancy, which has been joined with constantly increasing misconduct. nd that reporting these cases to parents does little or no good, easure of staying from school seeming to the truant sufficient nsation or offset for the flogging he gets at home, or the correce receives at the hands of the teacher. To expel such children chool is just what they would desire, and is often a real harm to ild, though apparently demanded by the interest of the school. seems to be needed is to produce a wholesome restraint upon t by sending one or more of the most incorrigible to the Reform , or some similar place. In order to do this it is necessary for wn of Easton to adopt such provisions in the General Statutes s Commonwealth as refer to this subject of truant children and ees from school, and to appoint truant officers who shall attend ir execution. By-laws concerning this subject will be presented approaching town meeting.

ool Committee.—Geo. G. Withington, Wm. L Chappin, Oliver Ames, 2d.

## FAIRHAVEN.

re has been some improvement during the past year in regard ctuality in attendance, but the average is yet far below what it be, not reaching quite 77 per cent. The record of this low tage, however, does injustice to the scholars generally. It is sed to a great extent by a few subjects of parental neglect, who, s, to escape legal discipline, are sent into the school long a to obtain a membership, and then are allowed to drift about growing up in ignorance, schooled in vice, untaught in knowland virtue. These are difficult cases to deal with. The letter law is complied with, while its spirit is evaded. Is there no rid the streets of these pernicious idlers, and compel their

regular and punctual attendance at school? We respectful earnestly ask your attention to the care of these neglected of for they, more than all others, need the benefits of our Public S and if the public does not interest itself in their welfare, nothing rescue them from a life of ignorance, with its consequent degrand misery. There is a limit to the operation of the truant labeyond its bounds lies a broad field for the operation of a spirited benevolence.

School Committee .- I. FAIRCHILD, Chairman; C. D. HUNT, Secretary.

# FALL RIVER.

The per cent. which our average attendance bore, in 1868-9, number of children in the city between 5 and 15 years of a 64 62-100; while for the year 1869-70, as we anticipated in o report, the per cent. is but 57 56-100, as will be seen by the port of the Secretary of the Board of Education. Our rank lowest of any town in the county, and the lowest but eleven State. Does this speak well for the public opinion of our city matter of school attendance? Nor is this an accidental occu for it has been substantially our history for many years; and t may justly be styled chronic. Public sentiment must be around this subject, for the evil is grave, and if continued the results prejudicial to the prosperity and moral tone of the city. Tru not, we believe, the principal cause of this result. Selfishness, perance on the part of many parents, and a general indifference subject by too many of our citizens are perhaps the leading which conspire to produce this sad state of affairs. While we r 2,945 pupils in our Primary Schools, we have only 926 registed the Intermediate grade. Therefore, more than two-thirds of Primary scholars never enter the Intermediate grade. Hence, also years of schooling, the time which we fix as sufficient to comple Primary grade, is all that two-thirds of our children receive schools, if we except the Factory and Evening Schools. This an overdrawn picture; it is an actual verity, as an examination vious reports will substantiate. The school law does not seem our wants in its practical operation, although its letter and spir to have a compulsory appearance. For cities, at least, and esp for the large manufacturing centres, we need some legislative end more suited to our torpid condition.

The following extract from a letter written by the Hon. A. J della, a member of the British Parliament, to the National Co

of Education, Gen. Eaton, is to the point. "The munificence American people in the sections I have visited, in providing ls, is, in my opinion, entirely without a parallel; a good educaeing offered free to every American child. If I have any regret, to notice that where such ample, almost lavish, provision has made, there are still many who partake very sparingly only, others absent themselves altogether from the feast. If you introduce a plan for enforcing regular attendance for a course ars, as is done in Germany, your educational system would leave or nothing to be desired. I may state, from long experience, that e the education of children is wholly dependent upon the parents, mess, or the indifference or intemperate habits of many, will a considerable number to be entirely neglected, or only partially ated; and in a country like yours, where the only guarantee for free institutions is the intelligent assent and support of the citithe State and the Nation have a right to demand that those who in the government of the country and enjoy its privileges shall had the advantage of education and a virtuous training."

nator Wilson says, "The two great necessities of the country, at resent time, are unification and education. A voice from across raters, echoed and re-echoed from the bloody battle-fields in the nt Franco-Prussian war, is significant and to the point. A systof compulsory education, established for more than two centuries rations of Germany, and for more than a century and a half in sia, has brought forth fruits which the world see. France, with the rand more fertile country, with the prestige of a brilliant milirecord, lies beaten on every field and helpless at the conqueror's

ys Mr. Pattison, the English school commissioner to Germany, a habit of universal attendance at the day school is one of the precious traditions of the German family."

is the defect above all others which claims and should receive attention; for our strength and prosperity in other directions will be comparative weakness, unless this is remedied. Our schools ald receive the fostering care of every citizen, and every child ald be induced by the elevated tone and controlling power of publications, or compelled by stringent enactments, to attend upon schools a series of years and acquire a good education. Not the ed acquirement of being able to read and write only; but a high-roader and deeper culture, an education which will develop the tal, moral and physical inherent powers of every child to such an

extent as will fit him for society and business, and those other which belong to the humane and Christian citizen.

Drawing School.—The committee, in accordance with a passed in 1870, opened an Evening School for instruction in in and mechanical drawing.

Two classes, exclusively males, were formed in mechanical, of both sexes in free-hand drawing. The classes in mechan composed largely of mechanics, both apprentices and journ They take hold of the enterprise with a degree of interest we commendation; and their enthusiasm gives promise of approximation to make the art of practical benefit in their daily wo The class in free-hand drawing is composed largely of the tea our day schools, though not confined to them as a class.

The school has not been established long enough for the corto form a correct judgment of the benefits which may result individual pupil or the city at large. It opened well, number in mechanical drawing and 80 in free-hand.

The success of the individual pupil will, in a large measure, upon his taste for the work, and the degree of application with it is prosecuted. This is a study, like all other branches of leand the scholars will find that to learn even to draw is work.

The committee look upon the passage of the Act for the erment of these schools as a step tending to reduce our school tions to a more practical character. Every mechanic should be means of becoming conversant with the general principles of philosophy and chemistry. And the day is undoubtedly not tant, when schools shall be established for instruction in the other kindred branches suited to the wants of both sexes in plife.

Moral Culture.—In presenting this subject we do not feel a school morals have been neglected in the past. Yet having influx of children from other places into our schools, and having a information from the city marshal that the list of juvenile offer increasing, we feel that the subject is one of more than ordinary tance at this crisis in our history, and should receive a large attention in our schools as well as at our firesides. This is a swhich all good people are interested, yet is too often neglecter halls of learning. Moral and intellectual culture should go hand; the former enriching the heart with all that is virtuous, not pure; the latter the mind with choicest treasures of knowledge, and truth. Then shall our school system accomplish its whole when the whole people shall be educated in the graces of the and the embellishments of the mind, with equal fidelity;

ence and goodness, the basis upon which our republican institure founded, and from which they derive their vitality and a, continue ever "sure and steadfast."

l Committee.—WM. Connell, Jr., Frederick A. Boomer, Robert Adams, Ienry, Jerome Dwelly, Crawford E. Lindsey, Milton Reed, Charles J. S. Wright Butler.

e complaint, that the present is a forcing system, a just one? er, no. There is no schedule of study, of any city, and cerot of ours, which requires more of a pupil than any child of y health and ability can easily perform, with judicious instrucring the six school hours. Occasionally, an extremely delicate, child, who never ought to be confined in a close room, suffers, from mental effort. Among a large number of teachers will d some, who, through lack of judgment, will give lessons of nable length to be prepared, or require a useless and injurious the powers of memory; these cases are exceptional, and are t of the individual and not of the system. It has been found, stigation in other cities, that such complaints were without ion, and that the evils could be traced to other causes. The o less than the body is made strong by exercise, and it is worse olish to charge failing health in pupils to the account of innental effort in schools. Look rather to improper food and to late hours and neglect of exercise, to novel reading and ther causes for the explanation, and not to the light tasks of nool-room. The average age of the greatest philosophers, nventors, statesmen the world has ever produced; the average all the intellectual workers of the two continents, as given sistics, show that mental activity promotes longevity. The the presidents of the United States, of presidents and proin colleges, of members of the learned professions, of graducolleges and of West Point, prove the same. It is time the en idea was abandoned. Scholars catch the infection, and, for doing too much, do nothing. Idleness both of body and more injurious than work. Let parents look at the examinapers for admission to the High School, where the attainments t years' school work are exhibited, and they will be convinced truth of the above.

you in favor of bringing large numbers of pupils together in Iding, and do you think single rooms the best? Primary and ar School pupils should be in separate buildings, both to avoid ption in school exercises and injury on the playground. Priupils should not be required to walk a long distance; and in a building of four rooms will contain as many as can be col-

lected in one locality. There is no necessity of making pupil more than one flight of stairs to school, and it should not b With a four-years' course in the Grammar department, and sen al promotions, eight rooms admit of a better classification tha number. A two-story building, containing eight rooms and a the most economical structure to build, and the cost for care struction is less than in smaller buildings. There is no argube given in favor of double rooms in Primary and Inter-The advantages claimed for large rooms in G Schools are, the enthusiasm inspired by the large number, and vantage to lower classes from hearing explanation and ins given to advanced scholars. Experience has fully tested th ferent conditions, and the almost unanimous verdict is in small rooms. The pupil loses more in attention distracted f own duties, than he gains from instruction given to other chances for idleness and play more than balance the enthusia parted by numbers. Much time is lost in changing classes, an confusion caused, which does not occur in single rooms; a time and attention of the principal is given to a great extent ernment, which in smaller rooms is devoted to the work of tion. I am aware that a school in a large room appears to advantage on public exhibition days, but no one would be to sacrifice the working power of a school for the entire yes single day's show.

Is not school work degenerating into mere system, form, process; in other words, is not instructions acrificed for more than the process; in other words, is not instructions acrificed for more than the period of the best educated been put forth to rescue the Public School system from the period of formalism, and with a good degree of success; a much yet remains to be accomplished, as there is still a clinging to lifeless formalities and methods, obsolete in one schools. The tendency in all progress is to extremes. In ing from the almost entire want of system, method, class of the past generation, the schools had reached almost the other, where individual growth and development was lost in evolutions and aggregate advancement. In avoiding Scyllar in danger of Charybdis.

Text-books, graded into almost infinite series, containing subjects to be taught only the skeletons, which were to be from the ample storehouses of knowledge and vitalized by the nation and illustration of the instructor, were put into the Experience has convinced educators that in a great major ools, the skeleton was neither clothed or vivified, and the children nothing except the dry bones to encourage interest in and insee the love for study. To remedy these defects, the best teachers oughout the country are expending more effort upon explanation, oral instruction, and in assisting their pupils in forming clear and inct conceptions of subjects taught, by appealing to the senses ough object-teaching, which belongs no more to the Primary School k than to that of every other grade. Our schools, then, are not ting into lifeless mannerism, but from it.

lost of our teachers are, and I presume will be, the products of own school system. The course of High School study provides Normal instruction. It has been established long enough to send class before you for examination. Certainly no candidates have n before the board, who showed more proficiency in the different nches in which the examinations are conducted. They are all r employed in teaching, and although succeeding well, no one doubt that six months spent in a Training School-where, er the direction and subject to the criticisms of an accomplished ther, they could have acquired and put in practice that knowledge the work which years of experience have accumulated—would e rendered their services far more valuable to the city. Those have gone from our Training School into the work, have fully constrated this fact and made the advantage of their preparation arent. Nothing is wanting but that you should formally recogthe school, and require such preparation of all the candidates for tions.

almost every city in the Northern, Western and Middle States of provides for such instruction, and the school reports from those es bring ample testimony of the advantages of the system. Mr. Ibrick in the Boston report says, "The Training Department has ved a most important auxiliary in improving our schools." Mr. ish of New Haven says, "Another year's experience exhibits be clearly than ever the vantage ground we have gained in establing these schools." I will not multiply these quotations. The dict elsewhere seems unanimous. I feel that there is no subject I present which is more closely connected with the future interests the schools than this, and I earnestly commend it to your early sideration.

Next to a thoroughly prepared teacher, one who is fitted and has a le love for the work, there is needed ample accommodation for all pupils. It is much to be regretted that there are in our city so may rooms poorly planned, and crowded with seats for a hundred or repupils. No argument is needed for the superiority, in Primary

Schools, of single rooms, with ample floor and air-space; be these defects would be less felt, if there were not more purseats. There are in the city eight hundred more pupils of the registered than there are seats for, and we can hardly expected than there are seats for, and we can hardly expected to be enthusiastic in the matter of attendance, or measurement in instruction, when three children are put in a seat fortable for two. Children like to come to a pleasant, common. I do not believe in any unnecessary expense, but I know that the economy would be best promoted by furnishing ample a venient school accommodations. If every ill-arranged, poorl lated, uncomfortable school building in this city were to be toto-day, and replaced with plain, permanent, well-arranged, nished and inviting school-houses, the increased efficiency schools in the next ten years would make ample return for penditure.

Grammar Schools.—There has been more board, slate an work than in any previous year, and the pupils, interested thr this trial of their powers, feel the stimulus of successful accoment, and work with all the ardor that the consciousness powers always gives, and which the memorizing of rules and can never give. No child cares to study a treatise upon the of rowing, with rules for its practice; but put the oars into his and show him how to use them, and he is at once interested. same way let a pupil test his knowledge in grammar by dai cises in composition; in geography by map-drawing; in arby examples drawn from every kind of business operation, arby examples drawn from every kind of business operation, arbranches by general exercises so conducted as to stimulate the sition, and to make individual acquirement common information by daily exercise let him fix it in the mind so that it can at the called into use, and there is no department of study that interest the pupil.

It is frequently said of a pupil when he makes a mistake, him better." It is not enough to tell him; he should be edu not do it. It is not enough to tell a boy to go into the war move his hands and feet, if we wish to teach him to swin must go into the water with him, and show by example how so in every branch of instruction; if we wish the highest we must possess the ability to do the work well, and then, example and precept, train our pupils in the art and science.

There has been during the year a great advance made in the of instruction in the different branches, through efforts made teachers in this direction, as I trust the public examinations with dantly show. No new methods have been forced upon the t

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y have been hampered by no dictum; but in our semi-monthly hers' meetings all the different methods have been fully discussed explained, and the teacher urged to adopt that method in which, trial, he found he accomplished the best results; as results, not nods, determine the efficiency of any school system.

ne Grammar Schools acquire great consideration from the fact so many pupils here complete their education. Not one-fourth ne pupils who enter the Grammar Schools ever go to the High sol. Many leave during the first years of the Grammar School se. Hence the importance of thorough instruction in the differbranches of study in this department, all of which are of the est practical utility.

igh School.—It is difficult to speak upon a subject, where the self-evident proposition is liable to be met with the geometric od est demonstrandum," but one who has passed years of his n a High School room, has a belief that unsupported assertion ot shake. It may be rank heresy to argue that a practical eduon means more than a knowledge of dollars and cents; that the est interests of society and the ultimate wants of a community not met, when all can read a newspaper and write a letter; that ct, civilization is not at its highest state, when, on the principle of sion of labor, each knows nothing beyond his daily employment. lieve there are no useless studies in the High School department. n, Greek, logic, mental philosophy, may not be direct aids in business, but they cultivate the mind, strengthen its powers, and the gateways to more extensive fields of knowledge, where, amid der views and nobler thoughts, the intellect and heart are refined, whole nature elevated, and the ability to exert an influence in the d increased.

he High School stands alone as the centre of influence and interamong the Graded Schools. Not only is its influence felt in the r schools, both by pupils as the goal of their ambition, and by hers as the exponent of their system and the culminating point heir labors, but all the schools are judged, as to efficiency, both citizens and strangers, by the scholarship and character of the h School, and the estimation in which it is held. Increase the er and influence of this school, and the stimulus will be sent using through every artery of the school system. Degrade it, her by withholding means or influence, and you will inevitably ken the other schools.

you wish all the schools of the city to be elevated and improved, ngthen by every means in your power the influence and efficiency his school. Let a building worthy of the city be provided, all the

means necessary for the highest culture be procured; let every be done that is needed to give it the full confidence and severy patron, and make it an object of pride to every cit you will see every school-room in the city permeated with It is worthy of more confidence and consideration than it few schools in the State do better work, but it needs more means. Above all, let there be some standard of admissi lished, so that the entering class will not represent all depreparation. It is an injury to any pupil to enter upon School work before he is thoroughly fitted; and it is a grieve to those who are qualified, and a great detriment to the have the time and effort of the teacher, which ought to be appropriate school work, devoted to imparting instructions should have been obtained in other schools.

Evening Schools.—For several reasons, the Evening School the past winter were more successful and satisfactory than the winter previous. Books were furnished by the city, which not only prevented the loss of time, experienced the year organizing, but also secured greater uniformity in the books better opportunity for class and general exercises.

The pupils being distributed in three schools, no room was and the number of pupils to a teacher was less than half th in charge of one teacher in years previous. Although this ment doubled the expense of the schools, yet the amount accomplished more than compensated for the outlay.

Such schools cannot be classified or taught like a Grade therefore a teacher cannot do justice to so large a number of he could take charge of in a day school. Much individual and attention are needed, and an average attendance of to pupils is as large a number as should be given to one teach best results are to be secured. The schools during the pa were well managed, the pupils were orderly and attentive interest and progress were marked and satisfactory. The av in the Osborne Street School was higher than in either of the although the number over eighteen in the different schools s there is a desire on the part of all who have experienced the an education to avail themselves of every opportunity to knowledge. If this desire is properly met and encouraged, that a large proportion of those who spend their evenings nading our streets, and in still more questionable amusements gathered into our schools, where they would be getting imp as individuals and as citizens.

'o accomplish this desirable result, it would be necessary not only organize Evening Schools, as during the past winter, with an addial one in the eastern portion of the city, but also to make separate ses in each school, or establish a separate school for those over enty years of age, where they could be taught not only arithmetic, ding and writing, but also philosophy as applied to mechanical rations, chemistry as applied to the arts, and receive such other ormation as would be of use to them in their various employments. elieve that instructors can be obtained in the city for such a school; when we witness the eagerness with which so many of ripe years il themselves of the opportunity to obtain a knowledge of mechandrawing, can it be doubted that they would with equal zeal seek acquire knowledge of other subjects, equally important and useful them? There is a natural and excusable feeling which prevents h from entering a school composed in a great measure of younger oils; and even if instruction was given only in the common nches, many more than those above the age of twenty would atd, if the school was organized expressly for them. No attempt has where been made, to my knowlege, to establish such a school; ept in those cities where a Mechanical School or Institute of Techogy has been provided, to give thorough and complete instruction adults in the different departments of knowledge.

The time will come, and at no distant day, when such an Industrial nool will be felt to be a necessity in Fall River; but until such time, a there not be such a system adopted as that proposed, which shall ord opportunity, during the winter season, to all those engaged in a different departments of industry, to acquire that knowledge nied perhaps to them in youth, but which would be of the greatest to them now, and which they are most desirous to obtain? I commend the subject to your consideration, fully believing that in other way can money be better expended than in adding to the owledge, and thus increasing the skill and elevating the lives, of one who not only by their labor add so much to the wealth and esperity of the city, but also by their intelligence and industry termine in so great measure the character of the community.

Mechanical Drawing.—During its session of 1870, the legislature of assachusetts enacted the statute, entitled, An Act relating to Free struction in Drawing.

The school which you have recently organized, in accordance with above named statute, has proved a gratifying success. The numr in attendance, 178, is far beyond the anticipations of the most orguine, and nearly all are from the ranks of the mechanics of the

city, the average age of the class being twenty-three years effect of the the training in this school must be to improve the ptions in all the departments of labor. Several cities, among wh Boston, Charlestown, Cambridge, Worcester, New Bedfor Taunton, have organized such Evening Schools, and secured flaresults. Fall River has been among the first in establishing e classes in free-hand drawing, which are largely attended betachers who are to instruct the pupils of their several schools subject. It will not only prepare them for their duties in this ment, but will stimulate to more preparation and greater the ness in other branches.

Factory School.—This school steadily increases in influence usefulness. The divisions come regularly from the mills, comin a great measure, of the same individuals as those of the preyear; and who, contrary to what might be reasonably expected to have lost but little during the interregnum, and are able instances to take up the school work at the point where it wand thus make marked progress from year to year in their studies.

This systematic organization of the school has allowed morand freedom to the teachers for general exercises in geography, mar, history and other subjects, which have been a marked feathe daily school work during the past year. It does not seem exto make these branches regular studies in the school, as the school-term of three months would not allow the pupils to make progress in the text-books, if the time was divided among so studies; but, in a ten minutes' exercise of the whole school, bot noon and afternoon, very much useful information can be imupon these and kindred topics by the teacher, which is understo retained by the pupils, as those who have been present at the examinations during the year will testify. This exercise I have able to make more extensive and systematic the coming year.

The school has been visited during the year by many memschool committees of different cities in New England, by edand members of the State legislature and State officials. A been deeply interested in the working of the school, and please the evident interest and progress of the pupils. School office Lewiston, Me., Manchester, N. H., Lawrence and New Bedford and from other cities and towns, have visited the school, receiformation in regard to methods pursued, obtained copies of the ent blank forms used; and in some of the cities named, school been organized upon the same plan. Connecticut has passed similar to that of Massachusetts, and the manufacturers through

te have cooperated as cheerfully and efficiently as our own manuurers in providing this system of schooling for factory children. have agreed to employ no children of school age unless they bring tificates, showing that they have attended school three months ing the year. Rhode Island is moving in the matter. New Hampe has such a law in force. New York and other States are agitatthe question, and the subject will soon be brought to the attention Congress. It is to be hoped that soon there will be found no place the United States where parents, through wilfulness or cupidity, deprive their children of an education which is so fully and liberprovided for them. In New York City there are thousands of dren, under ten years of age, employed in unhealthy work and in rentilated rooms. The interests of humanity demand that this ne should be met with the full strength of law.

School Attendance.—It is with some chagrin that I present the res of all efforts made to abate the great evil of irregular attendance, ich to such an extent neutralizes the efforts of the teachers in their ool work, degrades our schools in rank and scholarship, and inases the average expense of tuition. I have but one consolation, t, but for the attention given to the subject, the results would have n far worse than they are.

The most discouraging feature in the matter is, that there is no nedy which school authority has the power to apply. There are few cases of truancy, and these are promptly attended to by the . cer appointed, and the attendance of those who are members of the ools, from week to week, is as good as that of most other cities. e trouble comes independently of the influence, to a great extent, teacher or truant officer. More than twelve hundred children of ool age, employed in the mills and other establishments in the city, end school but three months in the year; this cause alone would uce our attendance at least twenty per cent. In addition to this, ny of the parents of the children in our schools do not value the antages of education afforded them, nor understand the evil of gular attendance, but keep their children at home to tend the y, to run on errands, and for a multitude of more frivolous prets, while they work in the mill, and, even if their children stay ay of their own accord, will interpose parental permission between child and the truant officer.

Such cases, and they are almost numberless, are beyond the control school authority, but they are most pernicious in their influence on the schools. It is not alone that these children are found upon street and at the wharves during school hours, or following handorgans and playing about school-houses, enticing other pupil school, but they return to school, after an absence of a few weeks, either to add hours of labor to the teacher, who is sufficiently taxed, or to take a part of the time which belongs school. Throughout the State at least one-fifth of the whole e of the Public Schools is lost through absenteeism, and here one-fourth; and yet these parents claim that the schools are fi that they have a right to send their children when and as a they please. I believe that neither law nor justice is right preted by the practice. Men, without children in school, ps taxes for the education of the children of the city, that the com and State may be benefited by a more intelligent citizenship; community and State should see to it that such money squandered. The schools should be conducted with a view greatest good to the greatest number, and no child has right to deprive other children of their share of instruction.

Is educational work keeping pace with the other elementhigher civilization, in the march of human progress? Are the of the country moving on with the great current of reform, or a thrown into a circling eddy, to be ever revolving and never advised while human need seeks some other aid to progress? A great of humanity, in its struggle for a higher, nobler life, was met be lar education, and no other agency than the Common School have supplied the want. They are the nation's lungs, and through million school-houses scattered over the land is drawn the putruth, honor, love, virtue, temperance, honesty, refinement, cultipatriotism, which purifies and vitalizes the life current of sopolitical systems. Because they have met this want, and exert transforming power, the money and influence of the noblest a in this and other countries, have been given, cheerfully and for sustain and elevate them.

In arts of peace and arts of war, that nation is the superior the school stands side by side with the church in every ville our own struggle for national existence, it was a contest between spelling-book and the whip; between knowledge and ig France, the home of the refined and cultured few, whose power, a few years since, astonished the world and gave the first place among the warlike powers, has been humble dust by that nation, heretofore so often vanquished, but whose for the last generation, have been drilled in the Common Schowhose intelligent army has proved invincible. No less are successperior in arts of peace. At the Paris Exhibition in 186

tions, in manufactures and inventions, arts and sciences, were so ich in advance of England, that her manufacturers became alarmed; d in 1868, a committee of nineteen was appointed to inquire into provisions for giving instruction, in theoretical and applied sciences, the industrial classes. The superiority of France, Switzerland, lgium, Holland and Germany, in all branches of arts and manufaces, was conceded to be due to the elementary instruction which is iversal among the working population of those countries, and to the entific training of the proprietors and managers. Says Professor ndall, "England will be outstripped, both in arts of peace and of r, by the continental nations, in virtue of their better education." ys Mr. Huth: "It is the want of industrial education in this country ich prevents our manufacturers from making the progress which er nations are making. With them, it is not a machine that works nachine, but brains sit at the loom and intelligence stands at the nning-wheel. Our best machines are improved upon by men who ve had the advantage of a superior education." Look we to our n country, rich in all the varied resources, agricultural and mineral ential to the comfort, growth and supremacy of a nation?—What t universal education, thorough and practical, is wanting to place us a nation, in every department of human enterprise, in wealth, wer and happiness, far beyond any other people of the earth? The hest soil invites intelligent labor; untold mineral wealth is waiting be wrought into forms of beauty and utility by the skilled artisan; freest government the world knows removes all obstructions from path of enterprise, and by equal and just laws encourages the mblest and poorest to compete for the highest prizes of skill and lustry. What is our present educational want? The Board of ucation in our State says: "That we are far behind many other tions in means of art culture, is very evident. We have few models, museums of art in our country, to which students can resort for dy and instruction. Our nation's artisans and mechanics feel this l neglect. Foreign workmen occupy the best and most responsible ces in our factories and workshops. Much can be and must be ne for the present generation of mechanics. We have no doubt t the greatest good will be accomplished by proper instruction in r Public Schools, and our chief efforts should be directed towards s end."

The introduction of free-hand drawing into the Public Schools, establishment of schools for mechanical and architectural draws, and of Industrial Schools and Institutes of Technology throught the country, show the determination of our progressive people to

provide for these wants which are now being felt; but through above all, comes the complaint that the Public Schools are progressive enough nor practical enough; and the prospect is, less Grammar and High Schools and Colleges devote more a to the practical methods, and less to abstruse theories, a large tion of their pupils will seek instruction elsewhere. Colle private institutions perceive the danger, and avoid it by provi meet the new demands; and Public Schools and Public teachers must be progressive, or ignominiously fail. The info obtained in the Grammar Schools must be more varied and th and High Schools must develop more and more into Scientif tutes. Teachers who wish to succeed must be fully read up in discoveries and inventions of the day; laborious students in partments of knowledge; and above all, complete masters of branch in their own departments. Text-books, in the prepar which a better knowledge of the development of the mind is ex replete with the latest information, and less cumbered with qu prolix explanations and obsure definitions, must be had. believe, will be the imperative demands of the next decade of and the Public Schools must be prepared to meet them.

Public Schools are the great civilizing force of the prese Freedom without them becomes anarchy, and liberty becomes Whether we view them while Socrates taught in the streets of and died in attestation of what he taught, or while Arnold sl corrupt age the divine beauty of a manly life, we see then truest index of the intelligence of the people, the surest sign progress, and the most certain means of their advancemen other institutions of society, the Public School had its origin i sity, and has been developed rather than formed. The pas not limit its progress, for it adapts itself to the multiplied wa necessities of to-day. It should be regarded as an institution State, and as a necessary condition of the national life. The its necessity should pervade the public mind, and become a con living verity. It should be the nucleus, around which should all that refines society or beautifies life. The affections of the should twine around it, and their hopes cling to it. Let all learn that education is the stock that will support whatever t of society may require to be engrafted upon it, and then labor prove our schools, as the surest means of promoting all le reforms; and the senseless excitements and wild fanaticisms often sweep over the land would cease, and there would b newer intellectual life and a fresher moral beauty.

Superintendent .- M. W. TEWESBURY.

### FREETOWN.

this town would rise in intelligence and prosperity, wisdom cery directs that she should foster her Common Schools by providing ally for their support, and encouraging, compelling if necessary, attendance of her children.

chool Committee.—Reuel Washburn, Sylvester R. Briggs, Thomas G. Nichols.

# NEW BEDFORD.

choing.—It was not expected, when drawing was introduced as a choin instruction in the schools, that every scholar would become rist, or make art the study and business of life. Nor was it detected to give it such importance as to prevent a proper attention to represent the proper attention to represent the proper attention to represent the proper attention to represent the single practical side of life, and that it is our duty, as educated the children in our schools to enjoy life, as well as to be all in it. It is impossible to overestimate the moral and seathetic intages of being educated to appreciate beauty—beauty of form, utline, of fitness and proportion. But aside from all this, the yieldge of the rudiments of drawing, and some little skill with the il, are valuable practical aids in the business of the world.

ney constitute another means of communicating and expressing ghts, and enable a person not unfrequently to convey an idea not y expressed in any other way. So great advantages do those who are able by a few rapid and telling strokes with a pencil to ess a thought or illustrate an idea, that we are of the belief that entary drawing is as useful as arithmetic or grammar, and should aught to every scholar, not as an accomplishment, but as a practication of knowledge.

recent Officer.—In compliance with the request of the school comsee, and in part at least to remedy this evil, the city government inted Rev. Isaac H. Coe as truant officer. Mr. Coe accepted the cion with the understanding that he was to act rather as a friend adviser than in any police capacity. In such a spirit he has died his efforts not only to reclaim the truant, but to affect the pas and guardians, through whose indifference and neglect the evil hiefly caused. So far as we have been able to judge, he has red with faithfulness, tact and discretion, and from a spirit of true evolence and kindness, and much good has been accomplished. In an officer cannot well be spared in a city like ours. The expense is labors cannot be weighed against their efficiency and success. We have truant laws and truant officers for the same great which we establish schools, not to punish crime, but in so possible, to prevent it. It is a part of the school work and di not a police system to bring offenders to justice, but a reformatem, tending to educate and employ the child, and prevent hing a criminal. Such being the case, the truant laws si executed by the school board, and the truant officer should a their control and direction, and his report should be made to

Chairman .- GEO. H. DUNBAR.

The Principles on which our Schools are Governed.—It while to make a brief connected statement of the principles I have referred; for while they have severally been treat our official publications, I believe they have not been all p together, as they stand related to each other, and as they c the foundation on which we are striving to rear the struct model American school system, and possess schools that shall and adorn that system. It is all the more desirable to prese principles in this connected form, because it is to a want of c ceptions and thorough appreciation in regard to them, an quently to laxity in carrying them into effect, that the chief of Public Schools in general are to be attributed. Moreover, ev they are valued and regarded, there are influences ceaselessly a induce school committees and teachers to be faithless to them of action that will serve some temporary purpose, or accompli showy results. It is well, therefore, that these grand primary inspiration and guidance should be clearly and impressively

I. The first great principle to be placed on record is, that Schools are for the development and nurture of true and no zenship.

It has been truthfully pronounced by judicial authority, to only the political advantage to be derived from the diffusion cation that justifies the imposition of taxes for educational parties apport of Public Schools is made imperative on every nity in order that the prerogatives of citizenship may be exe minds enlightened enough to appreciate their sacred responsible hearts high-toned enough to set a true value on the boon of

The question, then, comes up before us at the very star must the work of education be, in kind and manner, to ac this sublime result of fashioning good citizens?

First, let us consider what it must not be. It must not be to the intellect alone; for history proves, in many a damning that the most dangerous, because the most plausible and inside ts in society, tending to its degradation, are to be found where ly cultured intellects are united to corrupted and immoral hearts. nust not be preparation for lives of naked utility alone; for a rful content prevailing among its citizens is one of the prime safeds of a state, and the instrumentalities of happiness must be put essession of its children, as well as those of practical usefulness. ust not be the culture of the immaterial part of our being alone; healthful and effective mental condition is dependent on a health-physical condition, and the soundness of the body must be cared if only for the interests of the nobler powers.

he whole being, therefore, in all its various parts and capacities,—I and body, intellect, heart, taste, moral power,—is to be the obof regard, when the child stands before us to be educated for a

er of noble citizenship.

pass on to remark that this fundamental truth has seldom been pted as such, seldom has been found to dominate, with shaping guiding influence, in school affairs; for the grand desideratum the great majority of school committees and teachers, at this moment, is highly to discipline and culture the mental powers e. Any attempt to train the æsthetic side of our nature is widely reded as a gross perversion of the true economy of education, e to hold in esteem a condition of happiness, as a normal object e secured by a system of education, would be even more widely natized as the crude vagary of a diseased imagination. Practical ty, and that of the lowest and narrowest type, exhausts the contons of the largest class of minds on the subject.

ols are managed for far other ends than the real good of the le people. Here, for instance, is a community in which the ial aim of the instruction given in the Public Schools is to force e minds which are capable of the strain up to an exceptionably standard of scholarship. All regard for the common weal,—all ideration for individual interests,—is sacrificed to this unjustifiable ition. Mediocrity and misfortune, as well as laziness and stupidare rebuffed, disheartened and pressed back. Glory enough is for committee, teachers and schools, if a few only make a brilexhibition of the culture secured at so much cost. The onward ement of a school working for such an object is like the forced the of an army in a military exigency, when, if the vigorous prity reach the destined post in the prescribed time, all is well;—natter how many have dropped, faint and foot-sore, by the way.

other instances, indifference to the great truth we are considerand the vital influence it should exert, results in suffering such a petty motive as the reputation of the school, or of the teacher the main stimulus to exertion, the inspiration of the vital the school; and, as before, a system of artificial and heartless obtains, at the expense of individual needs and the general g

But what is most damaging of all, under such dominating the word discipline, as applied to a school, acquires a fearfull and restricted signification. Instead of implying that all the and most renovating moral forces which the teacher can combrought to bear for the production of that noblest of all fruit cation, a high-toned, refined and admirable character, it is limean only the security of so much order as may be requisite to plish the culture of the intellect; while any exhibition of graces of character is held to be only an incident, pleasing to where it occurs in connection with the paramount purpose school, but by no means to be provided for and anticipated a its chief purposes and normal effects.

II. The second great fundamental principle that under school system is, that the order of nature, in the development powers, should dictate the character and relation of our proinstruction.

Thus, as nature first operates through the perceptions, the time, through those acts of the understanding which are terrespections, and only when youth is blooming into maturity exit to deal freely with pure abstractions,—so educators must that the little folk in Primary Schools are addressed through the senses, and not until they are well along in their school of thrown upon processes of abstract reasoning.

This vital truth, long disregarded, is fast receiving the att demands. None are so wedded to old errors or blinded by as to deny its claims. With us it has for years been one of springs of our primary instruction; and I shall dwell on it cenough to direct attention to a serious error into which son tors have fallen on the subject.

Because nature develops our mental powers in the order been stated, there are those who insist that during the first Primary School life no endeavor shall be made to lead the se reason in any wise, neither shall their memories be taxed instruction they receive shall be exclusively confined to appear perceptions through object-teaching. At a later period the ries are to be called into exercise, and after still another their reasoning powers. This is the "Oswego" plan.

Now I do not hesitate to say, as the result of my observa experience, that nature justifies no such extreme. To practise it is inevitably to cramp and narrow the range of inaction. Because nature takes three successive steps in her process development, it by no means follows that she does not run those as to some extent into each other. In fact, we know well that she as so. The child reasons, after a fashion, from a very early period its life. The generalizations which it is constantly making from facts which it has learned are all processes of positive reasoning. That there is one reservation that we shall be compelled to make, that the very young scholar reasons only from sensible objects, ile the mature mind reasons also from immaterial conceptions.

While, therefore, we have a wise regard for the course of nature, must not so strain our methods as to outnature nature. Of course must not expect a great deal of our little children in this direction, they cannot too early be initiated into the habit of using the obts and facts that come within their knowledge as data to reason m. It is such a habit, in good part, early and imperceptibly formed cause of the intellectual atmosphere in which they have lived, which ders the scholars in our schools from cultured homes so much more ompt and ready in their school exercises than others are. They we learned to think,—that is, to reason. On the other hand, there many an illiterate person, who goes all through life with eyes in his ad and a brain behind them, yet never makes any deductions from a impressions on his senses,—and is to the last hour like a little ld; because he has never learned to use his senses as the lightness of his mind.

There is a further thought in this connection that I feel sure will et your approbation as a suggestion to be heeded by the teachers of more advanced classes in our schools. Because youth, when they re become somewhat mature, are able to reason comparatively well, s too often the case that their teachers think it quite unnecessary actically to illustrate the instructions they give; trusting to the aginations of the scholars to furnish them with sufficiently accurate oceptions of the realities connected with their school work. But mind can never be relied on to form accurate conceptions of matel objects that have never been known to the senses. No verbal scription is competent to picture those objects, in correct outline d proportions, to the ordinary mind. Of a consequence, the conotions which scholars form of material things referred to in their t-books, if they have never seen them, are for the most part vague, dowy, distorted or grotesque. Indeed, if these conceptions, even relation to subjects so familiar that the teachers would scarcely nk of making any explanation about them, were to be accurately. lineated on paper as they occur from day to day, they would often

prove so diametrically, perhaps so strangely, at variance veality, as to excite our hearty laughter; provided the realize the terrible defects in the methods and results of educati revealed, did not associate the subject with thoughts too parany admixture of mirth.

This is one of the secrets why so much of the instruction our schools, even in the higher grades, produces only indefine unsatisfactory results; and, even though it may effect a local in the mind, is likely soon to drop, lifeless, out of it; for the tive language of the school-books has no point on this accountied, commanding significance. Such language, therefore, mermanent impression, to become a part of the mind's intelligavailable vocabulary.

If, then, the last stage of the process of nature in mental ement is, under due limitations, to be associated with the first, the first is invariably to be associated with the last. Object-timin its true sense,—to the last moment of a scholar's career! our teachers, even those of the graduating class in the High never to let a descriptive word or phrase, that is of importance progress of their class, pass by without having tested what conceptions it has suggested to their minds, and either by a on the blackboard, or still better by a display of the real possible, to so endow the words which have suggested those tions with accurate and vivid significance, as to enroll them, of definite ideas, among the permanent and available furnish the mind.

III. The third fundamental principle to be noticed is, that is an organic unity running through nature's processes of development, so an organic unity should comprise in one syswhole the several ascending grades of the schools.

This is a vital point indeed. It used to be very generall garded, except in a loose and ineffective way. The severa pursued their work, each for itself, on quite an independent baing no unifying relations to what had gone before or to what come after.

But educators now feel that every onward movement in mary School is, as it were, a throw of the shuttle in the weav fabric that is to receive its finishing touches in the High School if the weaving be badly executed in the Primary School, all that may be exercised upon it in the High School may not repair its weakness or remove its deformities. The best of then, even in the lowest classes of the Primary School, is that furnishes the High School fit material for its work!

ut it would be idle to emphasize the principle before us, and expect and it a modifying power among our teachers, unless the compensor allowed them indicated a conviction of this substantial equality are value of their labor. To put it oracularly forth in the school rts, as some school committees do, that the work of Primary bols is of the last importance, and at the same time employ as hers of those schools half-fledged girls, at a contemptible rate of pensation, is a logical absurdity such as intelligent men should be med of; for the words will always weigh less than the dollars. erever grammar teachers are paid more liberally than primary hers for the same amount of service, it will be counted promotion a transferred from the latter grade to the former, let solid conviction the subject be what it may.

heartily rejoice, therefore, that the subject of the just relative pensation of our teachers has been thoroughly considered by the d, and adjusted so as to indicate, as nearly as possible, your ared convictions, and that I have been able to announce that the rences which now exist are to be referred solely to one of two es: First, the cost in time and money of a thorough training in classical and modern languages and the technical sciences, to preone to teach those branches, which demands a proportional case of pay. Second, the greater comparative draft made by a classes on the time and endurance of their teachers. No distination whatever is intended by those differences as to the degree polity and general culture of the teachers, or the relative importer of their work.

T. The fourth vital principle to which I will advert, is this: that various studies prescribed for our schools shall be carefully apported to each other according to their relative values as branches of e education.

he simple statement of this principle is sufficient to commend it very intelligent mind as of indispensable importance. Certain it at every study is not of equal value with every other, and all id not receive an equal amount of time. Still more, those studies he are of secondary consideration should not be accorded the foreplace.

it it has not been until within a short period that this subject has red any definite attention, and that the studies have been reguaccordingly. Arithmetic, in most of the schools of New Enghad come to usurp the foremost place in general esteem, and ally to consume from a third to a half of their whole working; as though the main object of all human lives, male and female, to perform operations with figures. Grammar had come to be

an attainment of marvellous importance for its own sake; parse a sentence accurately was held a more praisworthy achieve than to read it intelligently, or explain it understandingly. For spelling, with the hardest words that could be culled from the carry, were subjects of enthusiastic applause, albeit the meaning of the words, so finely spelled, might be understood. And while, processes to communicate a knowledge of the mother of whose symbols are almost the sole instruments through which communicates with mind, the repositories of the literary treas past ages, and the vehicles of present intelligence,—by far the important, therefore, of all knowledge,—were almost utterly unciated and unattempted.

The relative values of the several studies pursued in our may be quite clearly and definitively ascertained and establish they are determined by great general interests, and qualities and of mind that are common to all. And taking carefully into v the elements that should enter into the solution of such a private we have prescribed a curriculum for each grade, that indicated only the studies to be pursued, together with their specific us also the relations of each to the others, and the relative attention such channels of effort as shall result in a rounded and strictly culture, adapted to evolve the powers of the scholars in the manner, to communicate the intelligence most to be desired, serve the highest interests of the community, as well as of the mitted to our charge.

V. The fifth fundamental principle by which we are gover our administration, is, that in the teaching of every study, the ers shall have regard for principles more than for processes.

Does it seem like trifling to put forth a proposition like this? any one say that it has so long formed part of the very alph the work of education, in every quarter, as to render its procle unnecessary? In words, it has always had place among the a of the work of education; in practice, seldom. The majority text-books, of both the past and the present, have been written formity to the opposite statement, viz.: that processes are evalue than principles. More than half the schools, everywher been and are still taught in the same vicious conformity. Prare the ramparts behind which ignorant and lazy teachers themselves from the missiles of criticism, the demand for earness and the blunders that such effort, in their case, would involve that class of teachers are not, by any means, all dead yet.

herefore, the proposition should be proclaimed, as from the very setops:

rinciples rather than processes, in arithmetic! How many arithmetics have been in popular use, in which the statement of each topic been followed immediately by the rule by which to perform the k; and how many teachers have required these rules to be learned he same order of arrangement, before a single idea of the philoso-of the operation had been given to their scholars! How many of the same arithmetics, too, have been lumbered up with a variety of the sesses to arrive at precisely the same results, and the scholars have a put busily through them all, as though these different roads to a mon landing-place were each an avenue to new and untried acquirens.

low much time, too, has been spent in "doing sums," all after a mon pattern, after the process had been already thoroughly masd! Oh the fearful waste from all these wretched travesties of ruction!

We forbid the imposition of more than one formula by which to form the same class of operations; and have prescribed, also, the owing golden regulation:—

The definitions in the arithmetic are to be committed to memory, r having been clearly and sufficiently explained; but the rules d not be committed to memory. If they are required to be memed, it must be on the ground, not that they are methods by which perform operations, but only a concise way of stating those operates. The rule, therefore, is never to be memorized, in any event, if after the principle has been thoroughly elucidated. And, in all is, if a scholar is able to elucidate and exemplify a principle, it shall be rated as a defect that he is not also able to repeat the rule."

the popular geographies have been chiefly made up of disconnected stions upon details having little or no apparent connection with ad, intelligent generalizations, and only printed for the sake of ag out the material for a good-sized book! What terrific impositions have been made on children's memories of the positions of places, their directions and distances from each other, without a word as heir historic relations, or of what value they are to themselves or world; of the names and positions of rivers and mountains, too, hout reference to their uses in the great economy of nature, of ercourse and of civilization! And so forward about every portion the subject.

We set our faces against this dull, unintelligent monotony of work. I insist that whatever may be taught on the subject, be it much or

little, shall be taught so as to cast upon all details the ill power of the association of ideas derived from their natural, of historic relations, and thus impart to them vital character and

Principles rather than processes, in history! Just as geo have dealt chiefly with characterless details about the earth's the school histories have presented to the memories of the as their most important staple, a sequence of dates in compa arid facts, associated with nothing to engage the imagination press the memory. But this topic is worthy of special discuss will have more elaborated consideration in a subsequent part report.

Principles, once more, rather than processes, in reading! modulation more than the manner of giving expression to the of ideas? And in what numberless schools, past and presentire thought and purpose of the teachers, in connection relessons in reading, have been limited to exercises upon mod high attainment in that being regarded as exhaustive of the nities of the study. And all the while the meaning of the whose right expression engages so much ardent enthusiasm as orated drill, is a subject of very little thought or care; the enunciating, with very nice discrimination perhaps, words and that convey no definite images to their minds. Oh, the eabsurdity of all this;—and alas, the frequency of it!

VI. There is one further and crowning principle to be con viz.: "As is the teacher so is the school;" and therefore no shall be appointed who is not thoroughly competent for the we

A time-worn adage is the first clause of this proposition; tim conceded, yet seldom strictly regarded. And wherever the are carried forward without any settled principles on which the tem has been organized, and with which their methods and are ceaselessly compared, it is possible to go limping along competent teachers, without betraying how much of what defective and unsatisfactory is owing to that incompetency. have reached that point in progress where the conditions unde our teachers are at work are so distinctly defined, and withal a able to success, that the state of each class indicates with p the manner in which it has been taught. And so marked differences that prevail, consequent on the differing degrees of culture and aptitude in the teachers, that the adage through have expressed, in part, the principle under consideration, has a a force in our minds that carries along with it a deep and con ing sense of responsibility. We seem to hear a pleading voice every school-room: "Give us teachers who will do us justice. .]

with us elsewise; let not that crowning requisite of a good school s. Let not poor teachers set at naught the advantages we pos-We will honor our schools and our city, if only we have the more we require. And what some are favored with, let all equally c. Amidst the general success and progress, let there not be and there a class stationary, without ambition or life, its opporties unimproved, its precious time misspent,—not because of any in itself, but because it has been subjected to the control of inetent teachers!"

ch are the foundation principles on which the structure of our old system is reared, and in accordance with the spirit and desis of which their supervision has been conducted. And with a basis, and with all the parties concerned in their management control working together with a live enthusiasm to produce the possible fruit from conditions so advantageous, it is inevitable we should have good schools. One need know nothing of them ically; may never have witnessed their work or even entered precincts; and yet he has data enough to inspire confidence in worth.

e Study of Language.—Our teachers do not need to be reed that the standard study of our course, that which we regard
once the foundation support, the embodying medium and the
oling crown of all others,—is the study of our mother tongue.
in its port the first time that I have brought this important subject

is is not the first time that I have brought this important subject e attention of the board and of the teachers. It has been careconsidered in previous reports. It is also referred to explicitly e Manual. I have endeavored to set forth, in its true light, the relations of a good knowledge and command of language to a l education, and the wretched anomaly of sending out our gramcholars—and even, it may be said, our High School scholars he world with so meagre a vocabulary, and so wanting in the r to give correct and free expression to their thoughts, that th they have been devoting years to the acquisition of an educathey seem to have learned little or nothing to any good effect. as for the love and pursuit of high-toned, improving literature, pest evidence of culture and its best service too,—they have not ne familiar enough with language, as the vehicle of the pure and iful in thought and sentiment, to enjoy it and to crave more of ts noble and beautiful relations.

ecur to the subject, because the more one studies into its facts merits, the more its importance arrests the attention; and the ion rises anxiously in the mind, What course shall be taken to ly these defects, and better supply the needs of our youth? Many educators are content with prescribing a course of s literature for the High Schools. But this will not fully acc the object. For, in the first place, it reaches effectually very those who need its agency. More than half the scholars who ally enter our High Schools leave them before such a course o can have opportunity to render them any material service; where the still larger number who cease their schooling with the Grace of Schools, are not favored with its influence at all. In the secont their very ignorance of language prevents most High School from being greatly profited by what may be called, in any true the study of literature. It is entirely beyond them; and in anything so ambitious, they need to be subjected to a course of ing that shall have for its special object the elementary work of them judiciously to enlarge their vocabularies, and to have the they acquire the knowledge of in full and free command.

Not until then will they be in a favorable condition to und and appreciate the forms of expression in which our classical authors have clothed their thoughts, and be competent to ent the study of literature. \* \* \* \*

The exercise of "reading" ought to be the chief agent in vice required; but its opportunities are insanely cramped and ized by the way in which it is prepared for and conducted. committees prescribe a certain series of text-books in reading schools, and each one is to be finished before the next can be There are usually five different books in each series; ranging, uated application, from the little A-B-C-darians to the higher in the Grammar School. So these five books constitute th amount of the specific instrumentalities for intercourse with 1 that are provided for our scholars for nine long years! Then, ence to the pieces of which these volumes are composed,--them are didactic essays, or sublimated forensic speeches, ha relation to a child's thought and sympathies. And the narra the rest become well known long before they have served the in the reading class, and are at length as stale as bread that h kept until it is mouldy, and are as little calculated to whet th osity of the mind, which is the normal medium of its impro as such bread is to stimulate physical desire. So that words picture the absolute loathing with which each volume come regarded by the great majority of the scholars, long before come "finis" enables them to cast it aside for the next in ord

What leads to the exercise of the physical energies in curement of food? It is appetite. And in like manner it is curiosity which stirs the intellect to its acquisitions, and which

The old adage, "You can lead a horse to the watering trough you cannot make him drink," applies with special force to the t before us. Compelling our scholars to feed, month after month, uch distasteful aliment, we bring them out to their reading lessons, they go through them, parrot fashion, learning from them comtively nothing; for there is nothing to excite that eager, discriming sharpness of attention, which alone can make reading lessons dvantage as a means to the knowledge of language.

ittle children come to our schools from a portion of our homes, are not only able to read without effort, but who seem to possess onderfully full vocabulary for brains so youthful. And how has been brought about? Have the parents of such children kept n poring for years over two or three books, making a bateful task ach successive page,—books that range perhaps considerably betheir years? No; but they have supplied them with many of a lifferent kind; those that are expressly adapted to their age, both anner and matter; with subjects that excite their vivid interest; as one succeeds another, each new one is a fresh stimulus to curiy and is eagerly grasped and mastered. And when educators have learned to sit at nature's feet, and make mental curiosity genial spur to the reading lesson, by supplying fresh, attractive erial at frequent intervals, then the reading lessons of the schools become an elastic power instead of a spiritless formality. Then e will be accomplished in a few months than now is accomplished ears.

We have had in use in some of our Primary Schools, to a limited ont, the kind of reading material most useful for schools, in the see of the "Nursery," that charmingly edited and illustrated child's exine. It has been procured through the voluntary subscriptions he children, and has therefore cost the teachers some painstaking, the interest and life that have characterized the exercises in this active periodical, coming fresh as it does every month, over the sters of the well-thumbed and familiar text-books, have more than pensated them for their trouble, and the subscription list has been easing year by year.

the school committee of the city of Cleveland, Ohio, earnest to complish the most that is possible for their schools, take several dred copies of the "Nursery," and a still greater number of the title Corporal," an excellent magazine for somewhat older scholars; I fondly hope that one of the first uses of a portion of the income the Howland bequest, soon to be realized, will be to inaugurate

among our own schools of every grade, the same wise metho plementing the regular text-books in reading with accessio will give the scholars fresh, interesting matter, month by me so will stimulate curiosity, and infuse into the words of the vital power.

But stated reading lessons, even from the best of books : the best of instruction, are not the only means to be relie teaching the knowledge of language. They will enlarge one ulary, but they will not impart the ability to put it to use. tion abundantly proves that youth may become easy and is readers, without acquiring meanwhile either freedom or fu the use of words, in conversation and composition. A know grammar-in the sense in which the word is commonly under is a still feebler help. The pen must be brought into freque sition. There must be a systematic and progressive course cises, engaging both eye and hand, beginning in the Primar with practice upon single words, and gradually enlarging in s variety, until in the High School they culminate in creditable compositions, whose free, correct, sense-fraught and apposite expression shall manifest the richness and completeness of th that has been received; and in a taste for the literature wh bols have become living forces of the mind.

Superintendent .- HENRY F. HARRINGTON.

### RAYNHAM.

At the April meeting in 1870, the town appropriated amount of money than usual for the support of schools. of this fact, and the expressed desire of some of the pare committee decided to have three terms during the year in largest schools—one of eight weeks, one of ten and one of We are highly gratified with the good results following this The attendance during the spring term was better than it heretofore in the summer term. The children were happy free from school during the hot weather. The fall months, best months for study in the year, were thus secured to them ing an education. We now feel confident that a large majori pupils have really accomplished one-third more, in these thirt than they usually have accomplished in the twenty-four.

As suggested in the last annual report, we think that two ten weeks each, and a winter term of twelve, is no more s than the children of Raynham need to have. Especially is dering the early age at which they graduate. Very few attend school after reaching the age of fifteen.

our committee were disappointed and exceedingly sorry that the voted to go back to the old district system, at the special meetcalled for that purpose in May. We felt that it was attempting ock the wheels of civilization—an attempt which always proves ccessful in the end. We certainly hoped that the town would e a fair trial of the new system. We think a careful examination e school-houses, as they were two years ago under the old system, d alone be sufficient to prove its inefficiency. At least, it would that the usual manner of keeping them in repair, apparently the ral result of that system, was anything but creditable. Language d fail to describe the repulsive appearance of the house in District 7. Several of the others needed painting and glazing. Two without any suitable blackboards. Two or three had broken es and chairs, and badly-hacked desks. One needed shingling; al needed plastering; and all sadly needed whitewashing.

e think the town of Raynham never expended five hundred dolto better advantage, or in any way more to its credit, than d in repairing the school-houses and making them neat and ortable.

chool Committee.—John M. Manning, Nathan W. Shaw, E. B. Towns.

### REHOBOTH.

here failures occur, it is customary to throw the responsibility the teachers and the committee employing them; but while the rtance of a good teacher as a leading element of a good school ot be overestimated, cooperation on the part of parents is equally rtant. A higher appreciation of the importance of this subject is is most needed at the present time, and we must look for the dawn of reform in this direction. If parents understood their and acted in accordance with it, nearly every school would prove cess; for if the teacher was deficient in government, a knowledge e part of the scholars that they would be held responsible by parents for their behavior, would materially assist the teacher in taining proper discipline in the school. Children, too, would be ired to be regularly and punctually in their places, and not be red to absent themselves for trifling causes, thus overcoming her important difficulty that constitutes one of the most serious ments to the success of our schools.

hool-houses.—We feel it our duty to again call attention to the ition of some of the school-houses, and their entire unfitness for

school purposes. We have some good houses, but nearly a more attention; but of a few it is often remarked that they grace to the town. If any change could be made to reduce ber it should be done without delay. Is it surprising the scholars from some of our schools visit other places, where is paid to the comfort and convenience of those attending to where maps and other school apparatus are provided to asseparting instruction and giving cheerfulness to the school-rethey should return to their own cheerless and dilapidated reheartened and discouraged? Is it surprising that they should the pleasantness of home and the fields to such a school-reabsent themselves from school as often as possible? To make love the school, we should use all means possible to make it as that attraction, not compulsion, will lead them to avail the of its privileges.

School Committee .- WILLIAM A. KING, WILLIAM H. BOWEN, IRA PERI

## SEEKONK.

The lawyer, to be admitted to the bar, must have pursued of thorough preparation, and even then the community rath counsellor of established reputation. The physician must go his course of reading and lectures, and then, oftentimes, before he so secures the confidence of the community as to ployment; yet persons who have made no preparation, who stand little or nothing of the nature of mind, how it is edirected and developed, have sought and obtained the peteachers, when the future of society, the social position children, depends much on the work of the instructor, therefore, been our object to secure teachers of experimentation, and as far as possible to retain them.

School Committee .- JOSEPH BROWN, RAYMOND H. BURR, ANDREW M. 1

# SOMERSET.

We were very certain that great benefit would be deriv more thorough grading of the schools, and the division of Primary School, and now, after a year of trial, we are not dis by the results. Scholars of about the same age and acq have been brought together under the same teacher, which more time for class exercises, and has contributed to an in interest in both teachers and scholars. ough the generous action of the town at the annual meeting in a lengthening the school-year, we have been able to give our opportunities for acquiring an education, which have never before ecorded to them, and in which we had heretofore been sadly to to a large majority of the towns of this Commonwealth. In spect we are still below the average for the State, which is more ight months of Public School per year for each city and town. Sight months' schooling per year, we can secure and keep better at the same price per week, than with only six months' ng.

ol Committee.—L. E. LINCOLN, ELISHA ORVIS, JOHN CLEAVELAND.

### TAUNTON.

he cities and districts of many portions of our country, libraries een formed expressly for the use of teachers, as sources for colinformation, and as aids in their work of mental training. In ty of Taunton we have an excellent and well-selected public . I recommend that you adopt measures or exert your influsecure a teachers' department in this library, which shall conorks and books pertaining especially to the profession of teaching. t effectual avenue will thereby be opened for a high elevation of indard of public instruction. This, in its largest and most narnse, is a measure for the public benefit. Our teachers are necy so migratory, and are so inadequately compensated, that each s not sufficient inducement to incur the expense of procuring a professional library; but at a comparatively small outlay, a educational works can be obtained for the city public library, may be accessible alike to the several teachers, and to all interin the education of children and youth. At my suggestion, a oks of this kind were some time since placed on the shelves of rary, and the "American Educational Monthly" is sent gratuito the reading-room.

impression is too prevalent that the candidate for the teacher's on, who has not the requisite attainments for a position in the nar School department, can be tried in the Primary School. mpression is decidedly wrong. The person who has not the y attainments sufficient for a Grammar School, is not qualified upy the teacher's desk of a school of any grade; and certainly sition demands peculiar tact or special fitness more than that of imary teacher. Our Primary Schools are really the foundation educational structure. In them is commenced the formation se habits which, gaining strength during the various stages of

mental, moral and physical growth, influence thought as during the whole subsequent course of school training. H formation of habit must be specially guarded in childhood, instruction and influences should be correct. The first bend twig should be in the direction in which the tree is to be incl its maturing growth may not be checked by an after atter bending it, to change its inclination. No error is more than that of an incautious standard for the Primary teacher person of ordinary experience and observation is aware that of correcting habits already established, is much more diffi that of instituting new ones. Again, childhood is the peri greatest confidence in precept and example. Hence th "First impressions are the most lasting." If these are well rately directed, the pupil is fitly prepared for successful pr the care of the true and skilful educator, in the more advance ments of his instruction; to the extent they are wrongly dir early tuition is a detriment to future advancement in ch careful mental culturist. Hence, viewing this matter mere light of financial policy, we must regard the time of the p than lost, and the educational funds of the city worse than sq to the extent that erroneous instruction is practised in the el school.

But this is not all. The habits thus early formed, not affect the entire course of school training, but also will che person of mature years. Habits give direction, not thought and action, but to the mode of thinking and actingnot only the course of mental development, but constitute acter of the individual.

In addition to the peculiarities of his special department of tion, it is the province of the teacher of a Primary as we higher grade of school, to inculcate distinct enunciation of correct pronunciation of words, good expression in language direct the "young idea" into useful habits of accurate ob conception and practice.

The elementary teacher, more than any other, must draw resources to awaken and keep alive an interest in the minds of who are yet incapable of prolonged study from the text-b have not acquired the power of independent, patient investig has been well said, "It requires the greatest wisdom to teach foundest ignorance."

None should be placed in charge of the pupils of our Pri Intermediate Schools, but such as have made special preparate methods of imparting elementary instruction and in the man of children, either in a Training School for the purpose essful experience; and those already in your employment should this department of the teacher's work their peculiar study, and avor to exhibit the certain fruits of extended, thorough reading, iul observation and valuable experience, by the adoption of the improved processes in their school-room practice.

the studies pursued in the Grammar Schools, and of the manner arsuing them, as influenced by the prescribed plan of study, I not at this time fully express my views. These schools hold an stally important position in your educational system, because the zer number here finish their school education, and assume the e duties of life, without any further school advantages. At my estion, during the current year, you have introduced into the plan struction, oral and illustrative exercises in the simple forms of keeping. It is my impression that a portion of the time given to ally memorizing details,—as, for instance, the almost endless details ecography,—can be more profitably employed in some attention ignout the course to compositions, letter-writing, formation of ences and declamations, thereby acquiring the ability to arrange ghts correctly in good English, and the confidence to give them to be expression.

ne great excellence of our system is the uniform standard of nment definitely indicated in our plan of study for all the correding grades and classes throughout the city. In this respect we ar in advance of some cities of more mature age and larger th. If this plan of study can be so modified that its progressive s may be indicated by topics or subjects, instead of the number of s in particular books, the tendency will be to influence the teacho endeavor to make the scholars complete masters of the subjects, ad of masters merely of what the particular text-books teach ive broad, general instruction, in connection with the principles minutize of the books, that shall lead the pupils to a clear compreion of the whole subject taught, with power to express what they v in manner and form independent of any particular book, rather to confine the attention solely to the details and memoriter of the cular form of the text-books in use. Our instructors would exexaminations to be not necessarily in the precise language of the s used by the class, but in the subjects of those books, and would nclined to govern themselves accordingly in their class exercises instruction.

rest advantage can be gained by granting Grammar-School diploto such scholars as in the opinion of the committee have properly pleted the prescribed course of study, and whose deportment has satisfactory. A powerful incentive can thus be offered to the pupils of this grade to strive to attain good scholarship, and severe to the end." With our uniform standard of qualifica can be easily accomplished; and combined with comp methods of instruction, together with carefully arranged and examinations, can be rendered highly beneficial as an additioulus to better exertion on the part of both teachers and thereby better preparing a larger number both for the practions of life and for the more extended culture presented by vantages of our excellent High School.

Evening Schools.—The Evening Schools were in session months, or until the evenings became too short and the a too small to justify their continuance. The whole number belonging was 403; the average attendance was 23613. A pupils there were some marked instances of a high order endowments, active intellects, and rapid progress in scholars were many of equally marked obtuseness. The quality of i was generally good, the order was nearly equal to that of regulated day schools, and the pupils who remained during were in the main studious. Most of those who entered for pose of mere pastime, absented themselves as soon as they that earnest instruction and attentive study were requi charge of these schools was to me a source of pleasurable in regard them of great utility, in being the only available granting a partial supply to the pressing educational wan portion of our youth, whose necessity for toil to earn t bread prevents their attendance on the day schools, exc limited part of the year.

It must not be considered that the Evening Schools can tuted for the minimum amount of tuition required by law. Statutes, chap. 42, sect. 1.)

In order to carry into practice the spirit of the statute, a must be gained. First, you must make suitable provision proper schooling of such as can attend only three month larger portion, but not the whole of each school-year; so owners, agents or superintendents of manufactories must embetween the prescribed ages, who have not attended school cated by the law.

Admirable as is our graded system, it is based on the suppregular and continual membership, and is not calculated for attendance of the child-operative portion of our communexample: a scholar attended the Intermediate or Grammment during a part of last year, and worked in the factory the der of the time; he returns to school this year, and cannot be a school this year, and cannot be a school thin year, and cannot be a school thin year, and cannot be a school thin year, and cannot be a school thin year, and cannot be a school thin year, and cannot be a school thin year, and cannot be a school thin year, and cannot be a school thin year, and cannot be a school thin year, and cannot be a school thin year.

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of which he was a member, because he is not prepared for the all promotion; he cannot go on with his studies where he left because there is no class now in that particular stage of study, the classification of the school must not be disturbed to accomte the individual; he must fall back, join the next class, which is just where his class was when he entered the school one year ago. unfrequent have been the instances of aggrieved parents coming to me that their children could not progress satisfactorily in ing, because they must repeat the three or more months' course the previous year.

ildren of this class usually complete the Primary, and most, if II, the Intermediate course of study, before they begin their work manufacturing establishments; but, for reasons intimated, they eldom accomplish much in the Grammar Schools. For their subnit accommodation, one ungraded day school, at least, should be lished, in which classes of various grades can be formed to suit ircumstances of the scholars, just as is done in many country is, and as was usually done in the schools of olden time. Those were coming from schools without the city, with attainments not rmony with any class in our Graded Schools, could have the adges of this school until they became prepared for some graded

Pupils who, from incapacity, dulness or irregular attendance, accomplish the work of their classes, instead of falling back one can be readily accommodated in such a school.

ould the wisdom of your board deem it expedient to establish such school as the one I have indicated, the second point can be ually gained if the "owners, agents or superintendents of manuing establishments" will agree to employ no children within the ribed ages but such as obtain certificates from the superintendent iblic Schools, that they have completed the term of three months' ling in accordance with the provisions of the law. Those superdents of mills, whom I have consulted, cordially approve this and I am confident their cooperation would be heartily extended. awing.—There has been an increasing interest in the study and ice of drawing in the schools. It has become a regular, though ective study in the Grammar Schools. It has been introduced ncouraged, and has received considerable attention in the Priand Intermediate grades, and in the ungraded schools. y is unquestionable. I am pleased to be able to say that the dwork is already prepared for the successful operation of the t law of the State, which requires that drawing be among the ar studies of the Public Schools.

perintendent of Public Schools .- W. WATERMAN.

### WESTPORT.

In considering the evils that were arising from children ning school, the town of Westport, at its annual meeting, acfollowing by-laws, and appointed truant officers to carry effect when approved by the superior court.

SECTION 1. The almshouse in the town of Westport is hereby assigned and provided as the institution of instruction, house of refesuitable place of restraint and confinement and instruction of any metown convicted of being a habitual truant, or of any child not attent and growing up in ignorance in said town, between the ages of severe teen years.

SECT. 2 All children residing in the town of Westport, between seven and sixteen years, shall be required to attend some school or st of instruction at least twelve weeks in the year, unless there be son sufficient reason to the contrary; and all persons not so attending shatruants or absentees.

SECT. 3. Any minor of said town, between the ages of seven years, convicted of being a habitual truant, or of not attending growing up in ignorance, shall be punished by a fine not exceeding lars, or be committed to the almshouse for such time, not exceeding as the justice or court having jurisdiction of the same may determine

SECT. 4. There shall be chosen by the town of Westport, at its a ing, three persons who alone shall be authorized, in case of a violat by-laws, to make complaint and to carry into execution the senter and who shall receive such compensation for their services as the the town may determine, and who shall be known and denominate officers.

SECT. 5. Any trial justice or police court shall have jurisdice offences under these by-laws.

A true copy. Attest:

ALBERT C. KIRBY, To

Your committee believe the majority of the citizens of are satisfied with the practical workings of the new system past two years, and would not be willing to go back to a system, yet we occasionally hear grumbles from some. class of men in the town who will not acknowledge that new can equal that which they enjoyed when young. It can now cook such dinners as their mothers cooked, no took to those with which they worked when boys, no ploughs edd wooden ones, only they can no longer get them made schools equal to those to which they went years ago. In out of ten, these grumblers never go into one of our so have no means of making comparisons except by hearsay

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k, yet if asked for their reason for thinking the schools are not al to those they attended, they will answer, "I know they are"; and this is all.

School Committee.—Charles F. Sherman, John W. Gifford, Luther D. Kidder.

# ESSEX COUNTY.

# AMESBURY.

Primary Instruction.—From the foregoing remarks, it will be pered that many of our teachers are employed, either wholly or to a ter extent than formerly, in Primary instruction. In architec-, it is important to the stability of the superstructure, that the dation be well laid. When it was in contemplation to build a nument on the spot where occurred the battle of Bunker Hill, the asion of Gen. Lafayette's visit to this country, in the year 1825, taken advantage of to give additional interest to the imposing monies that took place on the day of the anniversary of the battle hat year. But the corner-stone that Lafayette then, with his own ds, assisted in laying, is not the "corner-stone" of the massive mn that now marks the spot. It was necessary to dig deeper, and a broader and solid foundation, that it might support, with securithe immense weight of the structure. Hence, in our educational em, the importance of the instruction in the Primary Schools. hem is laid the foundation that is to serve as a basis of all subsent acquirements in the student's school life.

School Committee.—Geo. W. Nichols, James H. Davis, Joseph Merrill.

# ANDOVER.

We have noticed that every year's experience in teaching adds to value of the teacher. The teacher becomes better acquainted a the scholars and with the citizens, and has more time to perfect or her method and system in the art of teaching. We are confit that school is, in every desirable excellence, the best, which has sinued the longest under the jurisdiction of the same energetic progressive teacher.

School Committee.—H S. GREENE, GRORGE FOSTER, E. FRANCIS HOLT.

## BEVERLY.

The present demand for trained teachers is many times great can be supplied by the few Normal Schools of the State. arranging the work to be done in the proposed school, you influenced by our own local wants. The course may be cons shorter than the Normal course, if it is demanded of those w that they shall have graduated from our High School, or t shall have an equivalent qualification. Or it may be thought that those who enter shall have completed in a creditable ma studies of the first two years of the High-School course. would secure as principal of such a school, a lady thorough fied,-one already familiar with this work of training ter would put in charge of this same principal the entire Primar ment of one of the three sections of the village (say th because there is already ample room), to be made the model of the town, and yet taught, for the most part, by young ladie recognized as teachers. In this way, the pupils of the School would be instructed in the best methods of teachin principles of school government, and at the same time recei experience, with the daily and even hourly advice of one ac with all the vicissitudes of the teacher's life, and familiar remedies for every unhealthy condition in school affairs. plan, too, the expense of at least one Primary teacher, possibly would be saved, thus materially diminishing the cost of the School.

Non-attendance.—I venture the assertion that of all the reports which have been written in Beverly for the past two years, not one in ten can be found which does not contain so on the subject of school attendance. Perhaps too much lessid. Perhaps the right thing has never yet been said. It this may be, it is very certain that the right state of things yet exist.

No subject has received so much anxious thought on the your superintendent during the past year. The good results, I hope not entirely invisible, are very meagre. Nothing has upon teachers so much unpaid-for labor—labor which was no upon in the teacher's contract, performed after the day's w done—as non-attendance. It has caused, indirectly perhapmore disturbance in the management and discipline of our than anything else. It has been a more potent agent than as in making bad citizens of some of the children,—boys and g

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hereafter to become the supporters or the sappers of the State. boy or the girl stays out (either with or without the permission he parents) a day or two, perhaps several days, and it may be eral weeks. When he returns, he sees an immense amount of hard k between him and a respectable standing among his classmates. That shall he do? He is unwilling to descend to the class below, , in fact, if he is only four or five weeks behind his own class, it ainly is asking too much to request him to enter a class almost a behind him. Well, one of a brave spirit will set himself manfully ork, and in a short time will hold his accustomed rank in his class. these are not more than one in ten; the nine will be discouraged, ome uninterested in their own studies, in the teacher, and in the ool, cease to work, and bring disaffection and disorder where bewas harmony. These absentees may be divided into two classes. t, those who are absent by permission of parents or guardian. at is needed as a remedy for the evil, in cases of this class, is a thy and strong public sentiment, which shall hold to the principle the State may justly frame and execute any law which is essento its own existence, even though it may infringe on individual rty. No argument is necessary to support this statement. The ciple is recognized in hundreds of laws. A man may be so eras to take the extreme definition of liberty or freedom, and say, his is a free country; I may do anything, whatsoever I desire." very quickly show him that he cannot murder with impunity; he cannot commit trespass on his neighbors; that he cannot run ough the streets for half an hour shouting at the top of his voice re!" when there is no fire. You show him that these are liberties ch are not allowed him even in a free republic. By a vote of the ple, the State may take the money of individuals and use it for the lic good, and no individual can hinder.

he justice of these principles no one questions. And the point I

ıld make is just here:—

we may put our hands into the pockets of the property-holders o, as a rule, are not the parents and therefore not directly beneal), and take out money freely for the education of our children, may demand of us that the money accomplish this object. We to the tax-payers, in order to justify our doings, a republican ernment cannot live unless there be intelligence among the people. ess the masses are educated, there can be no security to life and perty. You tax-payers may have no children, and therefore give no direct benefit from the money we demand of you for the port of schools, yet your advantage comes in the maintenance of

good government, in the increased security to life and property education brings.

They may justly answer us and say, "See to it that we these advantages; see to it your children are educated so the security to life and property may exist." Or again: if we detend the tax-payers of Beverly money enough to support the school weeks in a year, they may with the same justice demand of we send our children to school forty weeks in the year; and law which compels the one is not arbitrary or unjust, there which should compel the other would not be arbitrary or unjust.

I have wondered that the property-holders, the men who heavy taxes, don't come forward in their strength and dema the money which they are compelled to surrender for the ed of the people accomplish that result. Let me put it in anothe Inasmuch as there is everywhere in Massachusetts, in New Eyes, in nearly the whole American nation, a public sentimen recognizes the unquestionable justice of the law that allows us the property of men, willing or unwilling, for the support of so have wondered that these men do not exert themselves to estrong a public sentiment in favor of a law which shall con willing or unwilling, to send our children to school.

Superintendent of Public Schools .- L. F. DUPER.

## BRADFORD.

It is now five years since the High School was establish during this time it has been in successful operation for ten me each year. And it seems to us that this town may cherish a j ing of pride in the possession of such a school, especially as it lishment and support have been voluntary on the part of the that is to say, the town does not contain the necessary nu families (500) whereby it would be compelled by law to ma High School. And may it not be a source of congratulatio that we have so fine a location, so pleasant grounds and so dious a building for the use of this school? And to this we a its present high standing and character. During the last y same teachers have been continued, who are devoted to the Their management has been quiet and judicious, and everyth been done with regularity and system, and well done. The felt in this school was clearly shown by the presence of me two hundred and fifty parents and friends at the last examinate

To promote good order, things should be done in order. In there is a time when school begins and ends, so there should be done in order.

e in the session of each school devoted to the different branches sued. Reading should have its place, arithmetic its place, and so So all the branches should as a general rule claim and receive attention of the scholar each day through the term, and at a parallar or uniform time each day. Further, that study which seems challenge the hardest thinking should have that place in the day en the brain of the scholar is in the best working condition. Thus thmetic, which requires clear thinking to solve its intricacies, sold have a place in the early part of the day, while the easier inches, like reading, spelling and writing, should have attention ring the last hours of school.

School Committee.-H. E. CHADWICK, S. W. CARLETON, C. B. EMERSON.

## GLOUCESTER.

While I take great pleasure in recording my belief that the town an able and faithful corps of teachers, I must also express a wish this place, the last in which I shall have occasion to allude to them a collective body, that they would give more attention to self-culte, particularly in those branches of knowledge which would tend to rease their usefulness in their vocation. A few, it is true, feel this be a duty, and are zealous in the work of self-improvement; but all ght to read and study, that they may emancipate themselves from very to the text-book, even if it is the best; and to encourage all such a course, the few who pursue it would render a good service organizing an association of the teachers of the town for mutual provement in everything relating to the work of the school-room. night enlarge much on this subject, but it is not necessary; the nefits that would result from such an association of earnest teachers to too obvious to be pointed out in detail here.

I have seen a few beautiful maps of the continents on the blackards, but they were drawn by select pupils from copies, and must we required the expenditure of much time to produce them. It is to by what a few with great labor and a copy before them can do all, but by what all with rapidity and from memory can do to show it form and features of a continent or a country, as these are stamped on their minds, that we are to judge of the real value of the injuction they have received in this study; and the first requisite wards the attainment of the best results in this direction is, that the acher herself should be able to go to the board and quickly produce on the ends of her fingers a correct picture of any part of the earth is wishes her pupils to delineate. And when I consider the great wantage which the ability to do this gives to a teacher of geogra-

phy, I wonder that every one does not strive to obtain it, the may do this work before her class, without fear of criticism from scholars or any other spectators.

Acting Superintendent of Public Schools.—JOHN J. BABBON.

### HAVERHILL.

No class in the community occupies a more honorable or usef tion than that assigned to the instructors of our children and This fact renders it of the utmost consequence that they b worthy and competent to fill this position. In the judgment of committee, one of the most essential and highest qualification teacher is found in reverence for God, and a deep and sincere for the welfare of man and the best interests of society. The nature must be in a healthy state. A mere hireling cannot large and responsible a place in our political and social system interests are too vast to be intrusted to irresponsible hands. ers of the young must be reckoned among the most potent which are continually shaping and building the character of th ing generation. Much is said, and justly, of the tremendous in which free schools are exerting upon our political institutions a administration of public affairs. But in the nature of things, structors of these schools must keep the currents of their in pure and vigorous, or they will become infected or sluggish, and untold mischief. Our teachers must have character and publiand breadth of view, must comprehend and appreciate their re to the Commonwealth, as well as their peculiar responsibilities respect to the young.

New Studies.—To the introduction of new studies and new the committee are strongly disinclined and slow to move. On essential changes, in this respect, have been made during the A series of drawing cards to be used with the slate, and a sed drawing books to be used with the pencil, have been introduce former for the lower, and the latter for the higher schools hoped that instruction and practice in these exercises, alternative those of writing, will initiate our children in the art of drawing cultivate a taste therefor, and also greatly improve their chirogenesis, in many of our pupils, seems sadly imperfect. The commare confident that these lessons in drawing will prove a very of advantage to our schools, if the design and plan concerning the faithfully and enthusiastically carried out.

School Committee.—GEO. W. BOSWORTH, J. V. SMILEY, B. A. SAWYER.

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#### LAWRENCE.

Prawing.—The attention now given to the natural sciences and to mechanic arts, and the custom of representing to the eye, by at t a rude outline, such objects as we wish to describe to others, or get a clear idea of ourselves, render the training of the eye and hand in the production of plain figures and simple outlines, almost necessary to a good Common-School education, as is the learning to a and write.

The committee, believing this branch of study too important to be ger neglected, after careful investigation and experiment, have induced Bartholomew's System of Drawing into all the schools of city. The slates and cards are used in the Primary and Middle cools, and the drawing book in the other schools. Two lessons as k, of from one-half to three-quarters of an hour each, have been an in most of the schools for the last four months, and the result like gratifying to the committee and to the schools. With a little rt on the part of the teacher to keep up the interest in this subwhich has been so easily excited, the pupils will be greatly bended at a small expense of time and material, and those may be set benefited who least expect it.

Evening Schools.—The largest number present on any one evening been 534; the smallest number 148; the average attendance for and a half months being 306. The success has been more than equal our expectations in everything except the irregularity of the attender. The progress of most of the pupils that have been usually sent, has been very good; the order in the school-rooms has been exceptionable. Nothing but constant and regular attendance is uting to make these schools one of the greatest sources of pride in whole school system, at the present time. To secure this will have an earnest and combined effort on the part of both teachers scholars.

Training School.—The Training School has been in operation rly a year and a half, and has fully established itself in the estimation of the public. Its influence is felt in all of the schools of the consible employment. It is becoming more and more apparent to that something besides physical force and a resolute will is necessful to the well ordering of a school. The sub-teachers learn here or own deficiencies, and have an opportunity to make up for them well as they can. They are greatly benefited by the experience need under the immediate direction of those who have met and

overcome all the difficulties which ordinarily surround the te position, and when they leave the Training School to take che other schools, they have learned not to lay down too many rul to calmly consider new difficulties as they arise, and to find the way out of them. They have learned much in the art of got themselves, and in that of governing others; they are also much efited by the advice and encouragement of those who were teachers in the Training School, which is freely asked and argiven.

Nine young ladies have completed the course prescribed school, and are now teaching in the other schools of the city.

Superintendent of Schools.—G. E. HOOD.

#### LYNN.

Evening Schools.—Encouraged by the success attending schools one year since, your committee resolved to furnish e superior privileges the present year to that class of our pop whose avocations forbid their availing themselves of the benour day schools.

On the seventh of November, a school was established in the four large wards. As a general rule, a teacher was assig every twelve pupils. This rule has been modified to meet the stances of the schools. Where classification has been poslarger number has constituted a class, and in several instanwhich several of the pupils need constant attention, smaller in have monopolized the teacher's care.

Thus far the progress of the schools exceeds the most sexpectations of the committee. The class of persons who in schools assembled for amusement or from motives of curiosit this year either forborne to enter or have learned to apprecivate of the privileges offered them. The committee are grat learn that some who have in former years attended the G-Schools have entered the present classes for the review estudies.

The number of those who received instruction in these schelast year was three hundred and thirty; during the present seven hundred and thirty-six.

Drawing.—That drawing is an art of which the elements the minds of children, is proved by their common practice of pictures. By some teachers it is made preliminary to writing all it is acknowledged to be an important aid in training the the hand, and enabling the pupils to acquire skill in both brane.

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same time usually prescribed for but one branch. Its importance study in our schools may be estimated by considering its relation the artistic, mechanical and scientific employments, in many of ch it is indispensable; and most persons, in whatever condition in have frequent occasion for its exercise.

influenced by these considerations, the committee, late in the year, ided to introduce the system of Prof. Louis Bail. It consists of any wall charts, accompanied by a key for the use of teachers.

Chairman.—JACOB BATCHELDER.

## MANCHESTER.

the prime object is, not to memorize the rules and definitions, to enable the pupil to form clear ideas of a subject and to express in readily and understandingly and in a proper manner, it follows the study of language is of the very highest importance, and hardly begin too soon. It should be begun with the first lessons school, and receive attention during his whole school course. It mistake to suppose that success in life depends on mathematical ity chiefly, or to any considerable degree. Ten young men fail to seed in business or in obtaining situations, for lack of ability to ress themselves readily and correctly in speaking or writing, where fails for want of mathematical skill.

n an article in the "Atlantic Monthly," 1869, entitled "Consumpin America," written by one of Boston's most celebrated physis, the question is asked, "Is our system of education a promoter consumption?" He says: "We believe the affirmative of this stion to be true. Having the strongest love and respect for our em of education, we nevertheless assert that it is grossly imperin one particular. It wholly neglects the body in the desire to n the memory and stimulate the intellect. Instead of looking to full development of a youth, both body and mind, where does a pol system make any provision for the proper manly and womanly sical development of the children? A vacation is occasionally en; but where is the proper physical training of the pupils? Noere. Surely nothing can be more absurd than this, but it is ertheless true. What school committee-man thinks of a rounded, l-developed muscle, and vigorous frame of a body as the precurof 'support and actual aid' to a noble, well-balanced intellect?" his is undoubtedly too true so far as the fact is concerned, but is to be blamed is a very important question. We fear the consibility is a divided one, in which the public must share; but if mittee-men neglect or repress all forms of physical exercise in school, they should not be held blameless. We find in ever munity those who insist that what is chiefly wanted is a strict ance of school hours, and severe, uncompromising teachers we keep the scholars to their books, and will require perfect lesson learned from them,—who will, in a word, banish everything fis school-room except study and recitation, which is simply to the scholars have learned their lessons and can give them prove the model school is one in which every form is erect in its sixed, and all eyes fastened upon their books, and to compicture, "softest silence must reign paramount."

Of course this class of persons see no sense in physical ex and regard them as a waste of time or worse, since they cause of some noise and confusion. It is well to have fixe and rigid notions in regard to these matters, but it is import they should be according to knowledge, and when they are opposite to those of our best educators, they should be en with becoming modesty. After all, the importance of physica tion is generally recognized in theory. We wish to be practic ever, and reiterate the views expressed heretofore, that exercises should find a place in every school, but more partic the lower grades. It is not merely that physical education s ens and beautifies the human frame, and renders it a more fitti tation for the mind cultivated and refined by education, but cause we believe that one-half an hour a day spent judici such exercises, will enable the pupil to accomplish more would without it.

School Committee .- T. W. SLADE, G. A. PRIBET.

#### MARBLEHEAD.

School Government.—We are glad to find that our school governed by love and appeals to what is right, rather than by and brutal method of fear and threatenings of judgment. A sense of the might which forever stands behind Christian logentleness, and wins for them the victory, is seen in the decour teachers with the children of the town; and we rejoice that there are very few exceptions in any school to this benefituence. May the day soon come when no child in any school found who needs the harsher discipline. But the schools governed, and order must be secured, even if the rod and the are called into requisition. But their use in the school-room as likely to indicate the incompetency of the teacher as the decourse.

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e pupil. It is a remedy to be administered with great caution, should be labelled "dangerous," "use with care."

xt-books.—The books in use are substantially those mentioned in ast report. We have found Allen's Elementary Latin Series useooks for beginners, and have added them to the list for the High ol. With this exception, the books in this and our other schools in the same as last year. Text-books are valuable as aids if juusly compiled, but can never take the place of an intelligent oral uction from the teacher, which, more readily than all other ods, aids the pupil to think, to learn what powers of analysis he e may have, and use them in the acquisition of knowledge and e formation of intelligent opinions. If the world suffers especialom any great want, it is for men and women of convictions, for and women "who do their own thinking," and so add to the mulating intellectual force of society. The process is begun in ol, if children are properly instructed. The value of solid intellie in a people, the power of careful training and steady government e education of the young, has been newly illustrated by the war tly existing between Germany and France: while in Germany a little more than three per cent. of her vast armies are substantially rate and ignorant, more than thirty per cent. of the military forces rance can "neither read nor write!" It required no prophet to ast the result. Other things being equal, an educated and intelt people must inevitably become the conquerors and leaders.

wing as a School Exercise.—The experiment of introducing ng was tried in both our female Grammar Schools, and at the a School during the last term of the last year, and we are glad y, with much success. One lady gave gratuitous instruction in of the Grammar Schools and another at the Farm School. Both thoroughly skilled in all branches of plain and ornamental work, their generous service was highly appreciated by the committee eachers. A committee of ladies examined the various specimens ork in the Grammar School, and, from the great number of s offered for inspection, selected one from each class in each ol, to which were given the prizes awarded by our generous and eciative citizen, James J. H. Gregory, Esq. One afternoon in week was devoted to this purpose. We trust that these ladies find it possible to continue their valuable instruction in future; re think the practical use, to any young woman, of skill in this n neglected art, will amply compensate for a little less of gramarithmetic or history.

chool Committee.—W. B. Brown, Edward A. Lawrence, Thomas Foss, S. away, Jr., N. P. Sanborn, Stephen Hathaway, Benjamin P. Ware, James reller, William Gilley, Jr.

#### NAHANT.

Prominent among the difficulties which impair the usefulne teachers and are so injurious to the schools, is a want of co of the parents with the teachers. The province of both beithe young and tender mind in the development of those more tellectual qualities which will in after-life make their possesso and respected, their sympathies ought to be in perfect harmon teachers cannot do all that is to be done. Unless the parawith them and aid them by their influence and example, the must result in little more than failure. It is hard, very hard headway against that strongest of all incentives to good or influence of home.

Another evil growing out of wrong training at home is the lar attendance of scholars at school. This is a source of scholars at school. This is a source of scholars at school. This is a source of scholar noyance to the teachers, besides being highly detriments interests of the schools. They who are often absent or to only make but little progress themselves, but act as drawbethe rest of their schoolmates. A whole class is retarded be nection with one backward or dull scholar. Parents have responsibility in this matter. The right improvement of otional privileges is a sacred trust committed to their kee upon the manner in which that trust is kept by them, defuture welfare of their children. The fact that a child's absolute school, even for a single day, will to some extent affect its school make them feel that they cannot be too self-sacrific habitually thoughtful of effects in the future,—of effects in their control of habits of regularity and attention to duty, in their controls.

School Committee.-E. B. Johnson, J. T. Wilson, F. E. Johnson.

## NEWBURYPORT.

Teachers who develop a particular fondness and adapt teaching young children should never be "promoted," in the acceptance of that term—that is, transferred to a higher schools; but they should be promoted to a higher salary and r our Primary Schools. Experience has shown that our best s those which have been longest under the care of the same

Almost every school report published in this city, and in as well, has recognized the great importance of the Primar and advocated measures intended to insure greater efficienbranch of our school system. We acknowledge this to be of the whole superstructure; and as wise builders we must he foundation perfect, or the building will be weak and unsafe, I to supply the wants for which it was designed.

do not deny the wisdom of that policy which would give to we citizens the preference in the selection of teachers; on the ry, we admit it, provided they are as well qualified as any we procure elsewhere; but, admitting this, we feel that we have ed another responsibility, which is, the providing of more exfacilities for fitting and preparing them for the specific work we would set them to do. No person ought ever to have the care of a school, or the exclusive control of a room as assistant, as not previously gone through with a practical course of into in the theory and art of teaching, under a wise and experiteacher.

believe, then, it would be well for the school committee of this act with reference to this idea. Some plan might be devised grafted upon our system, the ultimate aim of which should be rove and elevate, first our Primary Schools, and through them nools of higher grade throughout the city.

ning Schools.—The following is the report of the teacher:—school term was from October to April, and in the course of it mes were enrolled, but as 43 of these were only for a short n the list, perhaps we might call the true number of pupils 108. se, 25 were colored. In forty-seven sessions the average attendras 72. Eighty we considered a full school. The average age white girls was 14 3-4ths years, of the colored girls 20 1-2

nere were fourteen classes, three of them in the primer, one in account keeping, the others divided their time with reading, g and arithmetic, using Sargent's First, Second and Third Readd Greenleaf's Arithmetic."

noting.—The committee will introduce drawing into our schools as they can make the necessary arrangements, according to quirement of the law passed by the last legislature.

s law found us wholly unprepared to carry out its provisions. of our teachers had been appointed with any reference to that and very few of them had any knowledge of it. A short of lessons was given them upon the first principles of drawing, in the summer, by Miss Loring of Boston, but not enough to them for teaching it with any degree of efficiency. It may be necessary to employ a teacher to give a course of evening lesson all teachers, and those who wish to teach some time this com-

ing winter. Hereafter, all who are to be employed as tead schools will be expected to have some knowledge of drawi

We are working our present system, we believe, up to tent of its capacity. We are getting about all out of i capable of affording us, and yet the results are far from bettory. We have teachers in our schools to-day, who are qualified for the vocation they have chosen. They do not the best method of awakening and developing all the faculty young mind, of arousing and interesting it in the pursuit edge, and yet they are faithful and zealous in the perfetheir duties, as far as they can understand them; they streplease, and yet they fail of gaining the best results, because never been taught to teach.

Teaching is a science, as well as law or medicine; and cas arising where a teacher is required to exercise as nice per wise discrimination of judgment, as would be required in other sciences, in order that she may arrive at a correct an decision with reference to them, and so maintain and progovernment in the school and equal justice to all the school

Training School.—The practical question then is, Ho accomplish our object? We believe much might be done trifling expense by organizing a "Training School" for the of those graduates of our High Schools who wish to end occupation of teaching in our city. Such a school would advantages over the Normal Schools. In such a school as have, an experienced teacher should be employed, who them in the practice of teaching. Some plan of this kin adopted in connection with one of our Primary Schools, a iment.

Such schools have been established in several cities and the State, and the benefits resulting from them are fully e expectation of their founders.

We deem it important that some plan like the above tried in this city; and we believe that, if our citizens we the committee in any efforts they might decide to make, t be no serious impediments to our success.

Superintendent.—There is another thing that seems indicate the further improvement of our school system, and that is lishment of the office of superintendent of schools. This received the favorable consideration of two successive of Last year the question was brought before the city authfailed to receive their favorable support. But we hope not distant when we shall be authorized to appoint some

to take the general supervision of our schools, who can give ole undivided attention to the work,—one who has a just and e idea of the ends to be attained in our schools, and is familiar he duties of the school-room and the necessary qualifications of her. Much has been said by our citizens and some action had reference to plans for the improvement of the city in various so as to afford increased facilities for business, and that men of rise with capital might be induced to invest here and become nts with us. All these motives are highly commendable, and pe in the end may prove successful. But for the attainment of eject, even, we think our school department has not had that eration which its importance demands. Men who are looking place to locate and engage in business, whether as manufacturers, nics or laborers-if they are of that class which it is most desiro draw to us—would certainly inquire about our educational es; they would be interested to know all about our school sysfor people of intelligence know that a community is prosperous purishing about in proportion to the thoroughness and perfection facilities for education. We must, then, if we wish to be known rogressive, enterprising community, keep shoulder to shoulder march of improvement, in this department, with other cities was in the Commonwealth. We believe that every city in the but Newburyport, with possibly one exception, has a superinnt of schools. A just local pride, and the importance of keeping th the progress of ideas and gaining the reputation of being l to none in this respect, seem to demand that something of the hould be attempted here. Some of the necessities of this office set forth in the report of last year, to which we would refer the . We do not claim that this would make our system absolutely t. Perfection is not to be reached by any act of ours in this nd generation, but we do believe that the measure which we pros an important step in the right direction towards perfectibility.

ool Committee.—Daniel P. Pike, Chairman; Isaac P. Noyes, Secretary; William irill, Agent; Moses Pettingell, Jr., Richard Plumer, Thomas C. Goodwin, & W. Show, William H. Noyes, Samuel J. Spaulding, N. A. Moulton, Will-Hube, John A. Hoxie.

#### PEABODY.

corize as we may, in regard to the amount of education and culo which every child in the community is justly entitled, the fact before us, that, of all the pupils who enter the lowest classes in rammar Schools, not more than one-third will remain to graduate at the end of the regular Grammar School course, and that one-half will leave before they reach the second class. It question of the greatest importance, What shall be done for of scholars? It is of little avail that we remind them of to remain longer in school, and quietly wait for a public that shall enforce it. These boys and girls are fast growing their places as citizens, with the limited amount of educate they can thus obtain. Our better course will be to so methods of teaching and course of studies to the want pupils, as to furnish them the best education possible, circumstances.

High School.—Lectures.—As assisting in the direction of eral culture, mention should be made of a course of sor lectures which has been given to the school on Saturday during the fall and winter terms. These lectures have been so far as the committee feel at liberty to speak of them—I and able gentlemen, who have succeeded in making them exinteresting as well as instructive. They have covered a topics, such as travel, history, biography, elocution, severa of natural science and kindred themes. The scholars required to take copious notes, and write out a full abstral lecture for inspection by the teachers, and for preservation reference.

It cannot be doubted that many of the scholars will be it visit again these new and wide fields of knowledge, such a glimpses of which have been given them in these lectures. of such a course of lectures, originating with the teachers of School and carried through by their exertions with such degree of success, has such obvious advantages in it, that it adopted with much satisfaction by several schools in this vi

School Supervision.—The subject of school supervision is received the attention of those engaged in the subject of The faults of the method pursued in most of the towns of have been noticed in public addresses, in essays, and in superintending committees. Especial attention has been essubject by the Secretary of the Board of Education. The usu has been to divide the school committee into sub-commit having one or more schools assigned to its care. If ever had a sufficient amount of time and opportunity to be fully to the work required, and was able also to keep informed improvements that should be adopted, either in the studies sued, or the proper division of studies and classification of then this method would be perhaps as good as any other.

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onversant with the subject knows that this is not possible. The bers of the committee have other engagements requiring more ss of their time; and it is impossible, with this method of supern, to secure that attention to the work which is done, or which be left undone, which its importance demands. The cities, and of the larger towns in the State, now employ a superintendent, her towns the committee appoint one of their own number to d to the details of classification of schools, to give especial attento the execution of the work as laid out by the committee, to d to prudential affairs, and to see that no school shall fail of doing ork at the proper time, and thus to see that each school is kept the highest standard. Where this latter plan is adopted, all of nembers of the committee will still be required to give all the and attention to the schools which they will generally be able to from their other duties. With this arrangement, each sub-comee should have assigned to it a particular department, rather than cular schools.

rawing.—The statutes of the Commonwealth now make drawa required study. Except in the High School, no systematic
mpt has been made to introduce this branch of study,—although
elementary teaching has been given by Miss Arnold in the
lis School. The committee have voted to introduce Bartholw's System of Drawing, and to begin the study at the commenceto of the next term.

here is, undoubtedly, a tendency to introduce too many studies, in attempting to do too much, there is a liability of failing to do hing well. Although the statute does not leave the introductor of drawing optional with the committee, yet they are of the ion that the provision is judicious, and that a portion of the time ach week may be spent in this study to the advantage of the is. Both the hand and the eye will be trained, and the taste vated and improved. A large portion of our teachers have read instruction, and are capable of teaching the elementary part of work required; and but little more than this will be attempted at ent, until experience has shown what can be accomplished.

chool Committee.—Amos Merrill, Fitch Poole, A. B. Hervey, G. F. Barnes, V. Hanson, George S. Osborne.

#### ROCKPORT.

ne fact that we have a system of education superior to that of r nations, is not a proof positive that all the children living within fluence will receive that education necessary for their future suc-

cess in the ordinary business of life. How can the marble in all the symmetry of the human form till it is taken from and fashioned by the hand of the artist? And how can intelligent, happy or useful without the culture and discipli cation? The transforming influence of education is nowhe more than in our Public Schools. It is obvious to every guardian that their children can be benefited by our school proportion to the time they are under their direct influe child who never enters the school-room is wholly deprive culture and discipline which may be derived from our syste cation; so also the child who is allowed to be absent from great part of the time during each term, rises but a very li scale of moral and intellectual improvement. Our school s be perfect in theory, our school-houses in every respect ple commodious, the best of teachers employed, and all the facilities for the acquirement of a good education provide we fear too many children, even in our midst, will grow up and women devoid of that culture and discipline so necessa future welfare, simply because their parents are too indulger ing them to stay away from school as often as they wish, parents are too indifferent in regard to the amount of educ children acquire.

School Committee .- N. F. S. YORK, CALVIN W. POOL, FRANK H. KNOW!

## SALEM.

Report of the Naumkeag School.—In making the second report of this special school for factory children, we are record that the performance of the second year has full promise of the first. The same untiring zeal of teacher a ging interest of the taught which marked the early days of have continued through the year with increasing force, experience has developed their resources and established understanding of their relations. The discipline of the sch of the well ordered family: firm and effectual, without rese or the sentiment of fear, apparently, save of loss of the a of a loved and respected teacher. The course of instruct sarily differing from that pursued in the regular day se proved especially adapted to the peculiar character of the evidently attractive and interesting to them, and, what is portant and gratifying, the school has become a special fathe parents and friends of the scholars; this is probably th great measure of the parochial missionary labors of the 2.7

ng these people. Frequent applications are made for the admisof children who are not operatives in the mill, and in repeated ances children have left employment in the mill and come to the sol daily at both forenoon and afternoon sessions. While the sare not all filled by pupils who are employed in the mill, the ptation is strong to allow the vacant ones to be occupied by these gulars, and thus to improve, in many instances, the only means chool instruction which they are probably willing to avail themes of, and the teacher cannot be expected to look with great sety upon a violation of rule, which at once is a personal complit, and affords to her the much desired opportunity of seeing the lts of her labors in the improvement and development of individpupils, and thus having something visible and appreciable to show

ner work,—a thing which can scarcely happen with the constantly

nging material of which the school is ordinarily composed. is also true that the school work is better and more easily done n there are few or no empty desks; there is then a better spirit, e enthusiasm, and greater success. It has been the endeavor er these circumstances to discriminate between those who seem ubjects for the regular schools and such as from their age and disty of attainments, or other cause, seem likely to become a drag n the regular classes of the Graded Schools; and those who seemed perly to belong to other schools have been at once dismissed from and sent where they belong. It is to be feared, however, that in many instances this has resulted in setting them adrift upon the ets without regular attendance upon any school. Notwithstandthis elimination, there remain at present twenty-three scholars in school who are attending both sessions daily. Of these a few are aged in the mill, but by extra diligence in completing their allotted k, these are enabled to come out in season to attend the school ing the last hour and a half or two hours of the session, thus gainso much time from their working hours to devote to the school, ddition to the other half-daily sessions to which they are entitled ommon with the rest. The others have been allowed to remain, porarily filling desks which would otherwise be vacant, apparently. ile these cases were few in number and in no wise affected the king of the school according to the original plan, it seemed to be ll respects a good thing, but the evident tendency was to relax lance on the part of the officers of the mill, and in a measure to eve them from a responsibility to see that the numbers of the ool were kept up, and its desks filled by those for whom it was ecially established. Whether this has been so we have no means knowing with certainty; there has not been latterly the same promptness in filling the places of those who have left schexpiration of their time, and we feel sure there are some children at work in the mill since the establishment of the school have not taken their turn at the school, though of the prone instance of a boy now attending both sessions daily, character according to his own statement. We are power matter, and have not even the poor satisfaction of being able ourselves with certainty of the truth, except so far as the pfit to disclose it, and shall continue so, unless we may be rethe enactment of a proper truant ordinance.

No material progress seems to have been made towards the benefits of this school to children employed in other m ing establishments, and in some instances it seems that cl changed from their employment in the Naumkeag, to other order to avoid the small reduction in wages which attenda school occasions, by parents whose only interest in them a be to gather the utmost farthing that may be got from the it may be that stern necessity excuses them, and it is to b does. We feel constrained again to refer to the suggesti last report as to the need of the truant ordinance and effici officers, not especially with reference to the children em manufacturing establishments, though here a judicious offi be of great value in extending the benefits of our school, sarily by an enforcement of the law, but by the moral for fluence of the enactment, and the appointment and presen officers charged with the especial oversight of the matter. other absentees from school, the juvenile loafers and habitu who can plead no honest employment as an excuse, for who dinance is specially needed. If these youthful candidat prison and the almshouse, could be even for a short time con kept under the ministrations of such a school as the Naumke now is, we believe, that in many cases results like what we would follow, and they would be found voluntarily seeking which in their utter ignorance they now avoid. The Plum School is now in operation with its doors open, and a por accommodations specially assigned for the use of the city, a of reformation for its habitual truants, and thus the onl there has been to our having a truant ordinance to be ap the courts and fully enforced, is removed. Why the auti the city after appropriating public moneys to assist in the ment of the school, should still decline to adopt the measure site to the full enjoyment of its benefits, seems incomprehen however true that the statutes of the Commonwealth concerning ruancy are as much a nullity in our city as ever.

For the Committee.—GEORGE F. CHOATE.

High School Studies.—Allusion has been made to what are ometimes called practical studies. I think there is a feeling in any communities where High Schools exist, that these schools are evering, in their courses of study, the attention of their pupils from ne important things of coming life. There is an intelligence and xactness possessed by citizens in different pursuits, in their daily usiness or profession, which naturally magnifies the importance of nose studies that are most nearly connected with these several vocaons, and diminishes that of others. One whose son is to be a merhant, hardly will admit the superior utility of the classical languages, nd estimates more highly the modern. One whose daughter is to be ne ornament of the home circle, will not praise, as practical, the abract reasonings of trigonometry, or even its applications in surveyg or navigation. It is equally true that the parent whose highest lea of style is derived from current newspaper articles, good as so any of them are for their temporary purpose, will not see the use f the distinctions made in rhetoric and grammar. Hence the diffialty of fixing upon what is practical for a great number of pupils rawn from the varied grades and pursuits of life. But there are ome branches, to the advantages derived from which, most perons will assent. I wish, so far as can be done, that our High School ourse of work could be made in a greater degree elective; that cerin specified studies of recognized utility might be required of every cholar, from which he could not be released, and that others might e taken up, if at all, when the judgment of the parent and the conent of the teacher should coincide, subject to the conditions, that hen assumed they should be pursued to a considerable degree of roficiency, and that they should not be taken by a less number of dividuals than would form a tolerably sized class.

Drawing.—By an Act of the legislature of last winter, the first action of the thirty-eighth chapter of the General Statutes was so tered as to make drawing, which had before been a study at the otion of the committee, a required one in the Public Schools. As ar own action had previously introduced this branch, its practical feet will be simply to continue it as a permanent part of Commonchool study. But by a second section of said Act, it is made the city of any city or town of more than ten thousand inhabitants, annually to make provision for giving free instruction in industrial or

mechanical drawing to persons over fifteen years of age, either day or evening schools, under the direction of the school com

Although not knowing, of course, what action the comir government will be likely to take in reference to fulfilling this of the Act, I will venture to express the hope that, should school be ordered, its privileges will not be confined to the evidently had in view at its enactment, but that such members Public Schools, and particularly of the High School, as may to avail themselves of its privileges may be permitted to do suitable age.

Truancy and Vagrancy.-It does not need the aid of stati prove that we have many children growing up in the street ought to be members of the Public Schools. They are found many localities, with such stereotyped excuses for being found that it is apparent their parents neglect to insure their attenda have not the power to enforce it, or that they are away without mission. All these reasons probably are real ones, added t pretences as being off work, or detained from school for some rary purpose, or the numerous evasions which idleness gives learn. If we could confine these wanderers so that their e would not influence others, or if we had a practical system of which would make their repose insecure, more or less wo gained to the schools and become permanent members, wh temptation they through their example offer to others to stay would be greatly reduced. It is certainly to be deplored that this city—are now living in the twenty-first year since the St powered us to have regular officers for enforcing the attend children upon the schools, thereby doing for the poor and inamong parents what they would gladly have us do, and securi large degree the community against petty offences,—and as ye not a system which many places of smaller population have a with manifest advantage. More particularly is this to be rebecause we have in our own limits a Reformatory School, to in the last resort, we could consign such as need its assistance.

Superintendent of Public Schools .- J. KIMBALL.

## SAUGUS.

School Government.—We notice, with pleasure, a marked ter on the part of teachers to a more and more complete and h system of school government, evidently resulting from those consideration of what is wise, judicious and prudent; the acelements of a permanent and healthful nature, and marking the ancy of mind as the true governing principle over mere brute force. his elevation, so to speak, of discipline, from a mere muscular effort o an intellectual science, we regard as among the most promising igns of the times. The time was when moral forces were looked upon rith suspicion and almost universal distrust, as signs of weakness. Most of us of a former generation can easily remember, as we look ack through the light of other days, teachers, both male and female, who did not spoil the child by sparing the rod; heroic punishment as symbolized by the rod and ferule), in their opinion, lay at the oundation of all useful, intellectual improvement,—its administration ften verging upon cruelty, and sometimes upon scenes of actual orror. But what we wish to say is not so much in condemnation of he old as in commendation of the new and better system, and parcularly to express our approbation of the conduct of those teachers ho have made such heroic and successful efforts in the right direcion.

Primary School Teaching.—There seems to be an idea, by no neans universal but too generally prevalent, that almost any one is apable of teaching a Primary School. This we regard as a misake, lamentable as a heedless and superficial estimate of what such a chool should be, and calculated to work infinite mischief in the chools, lasting injury to the best interests of the community, and reat injustice to a class of our most valuable teachers. Whether arises from the fact that the teaching of small children, so far as he use of text-books is concerned, is in the main merely rudimental, nd but little of what is called learning is directly applied, and in an ducational point of view, in the popular sense of the term, if success s less showy, failure is not so marked, or that the scholars are smaller, veaker, and supposed to be less stubborn and less impatient under estraint of discipline, we are not informed; but we are frequently eminded, in one way or another, that any teacher, good, bad or inifferent, is supposed to be good enough for our Primary Schools, specially if they are cheap. Without intending to express a want f just pride in or a true sentiment of loyalty to other great instituions of learning, we say, without hesitation, that the most important ducational interests of the Commonwealth are centred in our Comnon-School system, the great heart of which is the Primary School.

For the Committee .- Aug. B. Davis, Chairman.

#### SWAMPSCOTT.

There is much need of a better system of ventilation. The only neans now employed is lowering or raising the windows, which is

very dangerous to those who sit near them. On the other h they are not opened, the air soon becomes very bad, and is dec injurious to health. It is estimated that a man destroys seven feet of air every minute, and in order that the functions of th be performed, fresh air to this amount must be supplied. Wh air is expelled from the lungs it contains four or five per cent. bonic acid gas, but when it contains more than three per cent. gas, it is unfit to be breathed. Now if you confine forty or fift dren in a room, it must be very large, or the air must soon be vi and become unwholesome. But it is not only the carbonic ac that is injurious. The lungs are continually throwing off effete from the system, which mingles with the air, helping very m deteriorate it. No one would drink impure water, or eat unlea yet in every crowded room we take into our lungs air loaded w filth that is being thrown off from the body; and we compel or dren to sit from three hours to three hours and a half in just s atmosphere, in order to save the expense of proper ventilati which this bad air may be carried off, and pure air put in its Pure air is as necessary as pure water, and every school-room be provided with means for its abundant supply. Scholars can much where the air is bad; they become sleepy and stupid, a tirely unfit for study. Good air is as essential to scholarship as and the architect who can give a thorough ventilation to the room is doing one of the noblest works for the cause of educat

School Committee.-Wm. B. Chase, John Thomson, John H. Chosman.

#### WENHAM.

The parents' sympathy is always needed to sustain even the teachers. Frequent visits to the school-room will encourage teachers and show to your children that you are interested in education. By such visits you will know from personal obser how the school progresses, and learn if the teacher is faithf competent. Parents owe a duty to both teacher and schola the committee are unable to perform; and their visits not only the teacher, but often destroy those absurd reports and false is sions which sometimes prevail. True, teachers of experience tact will occasionally have good schools in the face of all opp and discouragement; but those are exceptions; for the beteachers desire and need the sympathy and encouragement which parents' frequent presence in the school-room will assuredly But few people, who have not tried it, realize the amount of laid quired to sustain the reputation of a good teacher in our Co

nools, at least under such circumstances. By examining the regiss, we find no record of any voter's presence in the school-room, cepting at the closing examinations. As visitors, the fathers are ninus quantity, and comparatively few ladies' names are recorded. Latin.—We are aware that there is, in the minds of some in this nmunity, an idea that any time devoted to the study of Latin, is all cases "wasted time," or at least that it could be much better ployed by taking some other study. In fact, they contend that committee go beyond their authority when they allow it. We ieve this to be a mistake. In a town like this, where we have no gh School, and where to some of the scholars an academic course inattainable, we deem it expedient to admit the classics, that those ll advanced in their English studies, may have an opportunity to e Latin. People sometimes fail to realize the value of classical dies; yet at the present time it is admitted, by the best of teachers, t a thorough appreciation of the English language is more fully ained by devoting a portion of the student's time to other langua-, even though but a limited amount of time be granted to them; what the scholar acquires in a few months is a source of enjoynt and power. Your committee have not been able to arrange any cial plan for the introduction of Latin, only allowing the study ere the pupil was fitted to take it, and the teacher able to instruct. School Committee .- R. FRANK DODGE, LIZZIE G. KINBALL, JOSEPH COOK.

## WEST NEWBURY.

We cannot in the limited time we have to prepare this report menn all we would wish to, and therefore we give our attention to see subjects which seem most important. Perhaps there are no cools in town of more importance than the Primary; they are the t in order of time, and consequently the foundation of all that lows.

As the child enters the school-room for the first time, a new world opened before him. He has left the freedom of home and is taught yield obedience to the discipline of the school. As early impresses are the strongest, and as it is here the child receives his first pressions of school life, it is of the greatest importance that those pressions should be correct, and in order that they may be so the ection of teachers is of the first importance. Many persons think at it does not require much tact or talent to teach a Primary nool, and look upon them as places in which to serve an apprensihip and try their skill, forgetful of the great fact that a mistake we will work far more injury than in any other school. To teach a

Primary School as it should be taught requires a rare gift, a congratulate the town upon its good fortune in this class of School Committee.—Moses C. Smith, J. Z. Gordon, D. L. Ambrose.

## FRANKLIN COUNTY.

## ASHFIELD.

To one of your committee, who has had but little expensely, it seems that our schools are not supplied with teach should be. Our teachers, many of them, lack age, expensely knowledge.

In some districts better teachers could and would have allot had the funds allowed it, and the funds would have allot there been fewer districts in the town. Teachers are plemperienced teachers command better pay than we have be give for both terms in the year. Our teachers, many of taken from the District School in which they graduated, as examination in those branches alone which they are expected and no further in these than they are expected to carry the they are put back into the same school to be the oracle for their own age. This at once begets an arrogance on the scholar, which can only be rebuked by the presence of and it is a question quite often whether this superiority exteacher.

It seems also, that teachers are changed from one district too often for the good of the schools. Children are not a absorb everything that comes within their reach. And a go must, of necessity, remain in a school long enough to learn tal condition of each and every scholar, and then the ment be prepared so as to be more certain of assimilation. We condition, judge for yourselves of the crudeness of such as is acquired from a mass of text-books. It is no more within the character grows, than salt, yeast and flour are breach book education alone, is a building of stone or brick without the foundation falls to pieces before symmetry can be obtopossible approach to completion is made.

School Committee .- G. B. HALL, F. G. HOWES, J. R. FAIRBANKS.

#### BERNARDSTON.

has been the general policy of your committee for several years deavor, by questions at the examination of teachers and of is, to induce habits of thought, and cause scholars to think and a rather than simply to commit to memory and repeat.

ittle girl was once asked if she understood her lessons at school. eply was that she had so much to learn that she had no time to stand. Too often this is the sad truth. Pupils are crammed words, rules, definitions, which they do not understand, and, out the faculty of memory alone cultivated, are called educated. o are the rulers and leaders in the business, political or religious to-day? Not always those who were accounted the best rs in school or college. More often those who are men of ht and action. The faculty of repeating the words of an author is not education; and that teacher who is satisfied with his fforts, and with his pupils, when thorough recitations of pages t-books are accomplished, makes a sad mistake. There must actical application of rules; there must be original thought dered; the child must acquire the habit of using his schooled knowledge as a means of acquiring more knowledge; and ok upon it as an end already obtained, or the school is comparaa failure.

col Committee.—S. N. Brooks, B. S. Burrows, T. A. Merrill, I. K. Brows,

#### DEERFIELD.

r committee beg leave to say that, whatever satisfaction they ave had in the faithful endeavors of the teachers during the ar, the standard of Common-School education in this town is ficiently high to correspond to the abilities of the scholars and property and position of the parents and to the opportunities the children ought to enjoy. Many boys and girls now in our will have no more than a Common-School education; and it may be admitted as possible that many who will have no nay become successful in business, in the enjoyment of estates, g elevated to public station and in the honor of all who may hem, yet very many of our boys and girls are to be impeded long, because their early education has been too much neg-They will be obliged to accept inferior positions. They will arder for smaller pay. They will be incapable of taking the

places in public life they ought to be able to fill, and to do which the town and the State require of capable and fait They will be too likely to be subject to the intrigues o leaders, the teaching of false theologies, or the suggestions wise scepticism. It is evident to the committee that ver young people are now just on the point of manhood and wo whose parents have allowed their prospects to be darkened by denying them the opportunities the State and the town ha them. When boys, at sixteen, are not capable of casting i a note, they will probably find it hard to manage their affai hood, to keep themselves out of debt or to loan their surp to a good advantage. And girls of the same age, who ca with ease and elegance, and know nothing of affairs, are no make suitable wives for men who seek competence, usefu honor. The schools are neglected by many. Children a home. They are despoiled of their inheritance. The par a small sum to-day, by the labor their children perform, a large sum to-morrow; and the children through all their day life have to regret the want of interest shown in their early value of the Common School.

It ought to be understood that the best investment a make is to educate his children. Every man who has a far savings bank in his own house. He can command a larginterest than any stocks or bonds or mortgages can pay; re him in something better than greenback currency or in a even as a pecuniary investment often immeasurably larger.

The work of teaching ought to be well paid. It is a hardest kinds of work that anybody can perform. It is in labor; brain-work. Let any man, who would consider wi work is, sit down at his ledger or other accounts, three I time for two halves of the day, and see if it is not fatig still more, let him undertake to explain his accounts, not only who can and who desire to understand them, but to can't or who won't take the trouble to understand them; a try and keep in quietness twenty, forty or a hundred child time so as not to interrupt him; and let him feel, too, that of the people, parents and committees, are upon him, and the satisfy them all, and make them think that his manners are his temper never betrayed into fretfulness, and that his wo rately and successfully performed. A teacher, who means duty,—and such we believe are most of our teachers,—h difficult part to perform. It involves usually an immense the nervous system,—often the worst tax that can be paid. .]

e teacher has three, four or five dollars a week beyond her board, um, in proportion to the increased price of articles she must buy, han used to be paid; her employment lasts about half a year, t so cuts up the year, that she can seldom find any employment e intervals. Five dollars a week for half a year, or 24 weeks constitute a half-year's school, give her \$120; or about a of a dollar a day by the year. What day-laborer, just imported abroad, that knows no more than only to wield his spade, will o little? or what imported domestic that scarce knows how to a kettle clean, does not, through the year, require more for her ery than the accomplished daughters of our own farmers often e, employed as they are to train the minds and characters of the en of our people, to make them beautiful and honored in life, elp them to be successful in the world? Do we pay our teachers such? The town that pays its teachers best, will, we may be in the course of years, have the best educated people. It will the most influence on public affairs. Its farms will be best culd; its crops will produce the largest returns. We want accomd teachers, even in an economical point of view.

1001 Committee.—E. Buckingham, S. Miller, George Fuller, A. P. Cooley, wford.

#### HAWLEY.

s town, before the law abolishing the district system was enacted, and her school-money, one-half upon the scholar and one-half a property basis,—a method which, while it gave some of the districts money enough to pay a first-class teacher and her six months in a year, left the smaller ones with the means to pay a second or third rate teacher from three to five months, ave her board round at that. Now, the law abolishing school its has removed this evil, by giving all our scholars the privilege ending school six months in a year where they can be best acodated,—a result which we think demonstrates the wisdom of gislature, as well as of the voters of this town, a large majority om voted not to return to the district system.

### LEVERETT.

record of this year shows that every scholar in this town gets schooling (the average of more than a month), by the operaf the law of 1869. We are liable to lose the whole balance of the State appropriation at any time, by the neglect of a smal or their refusal to burden themselves by excessive taxation for menting their school. Is it just that any one should be de the avails of the public provision by the fault of another alleged that the interest of the people in the schools is destroy abolition of districts.' Naturally we should expect just the The narrow district-bound interest should, with increasing expand to one town-wide; each tax-payer following the comm of contributed money as far as it reaches, and demanding th expenditure of every cent. If our patriotism is limited to c family lines, it ought in reason to be expanded by some e Until we feel an interest in all the young, a district is the tr of our narrowness. A great part of the tax-payers have no they would naturally feel for all an equal interest in rega application of their share of the provisions made. All other equalized by town limits; so the school tax ought to be.

Chairman.-J. P. WATSON.

#### MONTAGUE.

There is a disposition too prevalent among many people, a stand-still policy in relation to our schools, treading the s and repeating the same arguments year after year, exhibiti ful lack of enterprise and want of invention; and if the ide class of people could be carried out, the masses would, as quence, be kept far in the rear of the age in which they li much of this want of progress may, in a measure, be attri parents. They are derelict in their duty in not being more wasitors of our schools. They ought to go to the school-room and observe what progress, if any, is being made; and wh teacher is competent for and faithful in the performance duties; and satisfy themselves whether or not the money tribute for the education of their children is being judiciousl ed; and not leave everything in trust to the teachers and co Their presence would encourage the teacher, inspire the child confidence and increased zeal, and make the duties of the sch a labor of love, instead of one of onerous burdens. Paren not suffer themselves to be thus indifferent, not only to what them immediately, but to the future interest and well-being children.

We would welcome any plan which might enlist the symp cooperation of parents, and increase their interest in the Some of our schools suffer for want of such interest. The ors under an almost insurmountable disadvantage, who has to ennter adverse influences in the family and home of the pupils. ents alone can secure in their children regularity and constancy of endance, and a loving appreciation of the teacher's labors and selfials for her pupils. They should be familiar with the scenes the school-room, and with the face of their teacher. The teacher visit the home of the children, and make herself known socially re, but she cannot take her school-room with her. Parents must t that in person, would they gain a deep interest in the school. e committee and the teachers do most cordially invite parents to t the schools. If the varied, difficult and exhausting work of the ool-room could be understood at home, there would be more symhy and less fault-finding with the teacher. Nothing can give us d schools if the people forsake them. The wisest provisions of , the most liberal appropriations of money and most pains-taking ervision by the proper authorities cannot compensate for that. e very breath is gone, if the atmosphere of public interest is want-. We must ask, most earnestly, that all will take the time to nk on this matter, and seeing how much depends on them, will her their most vital sympathies around these harvest-fields of mind l soul. See that no injury befalls them; let them want nothing of ial warmth or fostering care. All that is truest and noblest in the ily and the community should find its way to the school-room; best thoughts and holiest deeds should shed their selectest uence there.

The irregularities of attendance, the tardiness and absences that figure our registers as well as injure so greatly our schools, must at least, traced back in almost every instance to the want at home intelligent interest in the prosperity of the school. Parents do know whether their children are at school or not, and one reason they are never there themselves. The teacher is blamed and left hout sympathy because there is no adequate knowledge of her ors and difficulties. Let cooperation be established and maintained ween home and the school-house, and incalculable good will be ne to each. In some cases, as matters now stand, the only excepn to entire indifference is passionate interference. Intermeddling ruined hundreds of schools. It is better to bear and forbear than attempt an obtrusive interference. So far from this, the parents uld give teachers their sympathy and cordial support. They ould sympathize with them in their perplexities, in their labors, in se nameless trials so constant in the school-room which unnerve system and waste away the strength of a faithful teacher. Let ents give their hearty cooperation to the instruction of their children, and soon poor schools will be less frequent and go will take a higher stand. More efficient work will be dor the teacher will have more time as well as heart to labo pupils will have an additional motive to induce them to most of their privileges, even the approbation of beloved pa

School Committee.—E. A. DRANE, DAVID CRONYN, EDWARD NORTON.

#### NEW SALEM.

The right way to do our work well is, not to have too ma houses, but to make what we have something as they oug pleasant, agreeable places for study,—and then get the mo cheerful, intelligent teachers you can find, such as will dra thoughts, stirring up the minds of the pupils (the parents some have done the past year) to get their lessons unders and we shall thus encourage the teacher and the pupil t best, and shall be rewarded by their commendable acquis giving comfortable, quiet school-rooms, with maps and blackboards adorning the walls, and neatness and order a are inculcating a love for knowledge and all that appear We are giving the pupils associations that will be thoug pleasure in time to come, and will make their future life They will be useful to the town, a blessing to the country, g and mothers and children. Happy is the town that is in s and happy are its inhabitants.

School Committee .- D. EASTMAN, B. W. FAY, W. PUTNAM.

#### NORTHFIELD.

A careful analysis of tables, for a series of years, shows has been, in this town, general, not to say invariable, In all respects, save that of average attendance upon the Northfield maintains a higher relative position than she years since. It cannot be denied, however, notwithstanding able showing of the tables, that the standard of education is much too low. The lack of interest in the good cau itself too clearly in the bad condition of many of our settings. This matter has been brought to the considerate town for many years. The do-nothing policy—requiring nearly the same, year by year—proves that there is a sad where. Must these old, dilapidated school-houses be prestransmitted to coming generations? The hope was express last report, that the transfer of the school buildings to the

town would open the way for their immediate improvement. at hope seemed about to be realized, when the town voted to bethe work by building a house in number three. But alas, that we was doomed to disappointment. The year has passed without change for the better. Now that our school-houses go back in to the control of the districts, we greatly fear that all improvement is indefinitely postponed.

t has been claimed by the advocates of the town system, that it ald give us better school-houses. We shall be greatly disappointif that claim is not established, by the neglect which will follow return to the district system. The interest of too many seems to confined to the theoretical question, Shall we have our districts? we that this question has been decided in the affirmative, we hope to the victors will not repose upon their laurels. Let them look all to the condition of their school-houses and cheerfully pay whater increased taxes their improvement so imperatively demands. some of the earnestness and zeal manifested in maintaining distines, now be expended upon school edifices.

For the Committee.—T. J. CLARK.

#### ORANGE.

t is bad policy for scholars to be kept away from school, or to be wed to stay away for any trivial affair, as they contract habits of ifference to learning, punctuality and system. Then again, lessons gone over, explanations made and ideas developed, which the ent scholar loses the benefit of, and thereby not only his own prognis retarded, but the advance of others is impeded; for scholars gular in attendance fall behind those who are regular, and thus ome backward and a clog to a teacher's usefulness and a trial to patience. A day's schooling lost, or even an hour's, is money, because "time is money." Who will not say that learning is the more than money? It is safer too. It needs no insurance, is ject to no fluctuations or reverses of fortune, but is ever ready to or "drafts at sight or on call." We know money is power, and weledge is power. But of the two, give us the power of knowles.

Ve have noticed, in our visits to the schools, a desire or pracof reaching over the elementary principles of education, or takup studies in succession faster than is deemed proper in some es. We would have no one infer by this, that no study of a ner grade is pursued until a lower one is completed. No; we do believe in a judicious gradation of studies—fundamental truths understood, then a basis for onward advancement. erection of a building, the foundation is first laid, then a superstructure. The youthful mind should start right and ahead as fast as age and capacity will admit. It should loaded down with too many exercises, as is the prevailing cy now-a-days. A thorough, rather than a superficial kn should be the rule, and not the exception. It is not the gone over, but how well it is understood and remember makes the learned scholar.

School Committee .- S. S. DEXTER, H. W. KHIGHTS, A. E. BROOKS.

#### SHELBURNE.

Without doubt it is the desire of the inhabitants of the Shelburne to get the best return for the money expended education of their children.

Then the question, "How shall that money be expend one of no small importance and requires thoughtful considers

Shall we give the power of engaging teachers, of having ticular and watchful care over all the schools, to a committee in accordance with, and to carry out, the intent of the new of the State? Or shall we do as we have done the past year, member of the school committee from each one of the ollimits, to have especial charge of one school within certain and pay but little, if any, attention to any other school?

It has been said the people living within these limits is ter what they need than any one who does not thus live, can manage their schools better for themselves than other them. But we are inclined to think that this method of is a mistaken one. The member of the committee who had of a single school may know how that school is conduct know all the good points of the teaching in it, and seed may be satisfied that it is a good one, and rest content when has. But other teachers may have their excellent teaching, of which he knows nothing, and does not be cause all the time which he devotes to school matters is to the school under his immediate charge; and thus things of one school are confined to that school; they are troduced into others, nor are the good things of others in into that.

Better would it be for the town to "require the school tee annually to appoint a superintendent of public school 2.]

er the direction and control of said committee, shall have the and supervision of the schools."

his officer, visiting every school and making himself fully aonted with what is best in each one of them, is in a position stroduce into each one the best features of all, insisting upon y real improvement and the discarding of everything that should mong the dead and buried things of the past.

Te therefore hope that this needed change in the management ur schools will take place, that they may attain a still higher ding.

chool Committee.—B. V. Stevenson, D. Orlando Fibe, Pliny Fibe, Geo. N. H, Dan. B. Bardwell, Williams T. Peck.

#### SHUTESBURY.

he town has already voted to return to the district system, but believe that we now have too many districts in town, and that we not to take some course to lessen our number, in order that we have a more equal and economical distribution of money, and able to have six months' schooling in every district. We have exist in town where the past year there were only two scholars, ould seem like throwing away money to attempt to maintain a ool in those districts; besides, the town would be very unlikely to a sufficient sum to support ten schools six months; consequently should lose our share of the income from the State, as well as have small amount of schooling.

chool Committee.—G. A. Berry, H. Hamilton, A. P. Brown.

#### SUNDERLAND.

Tith the Primary School, the year has been one of uninterrupted perity. Through the untiring efforts of the teacher, pupils in school have made remarkable progress, and these labors have a appreciated to some extent by those parents who are most liar with her method of teaching little children. There are, ever, a thousand little acts of kindness that win the esteem and love of pupils, and tend to cultivate the nobler powers of the which pass unnoticed by the casual observer, and are never ished to the world, but they are indelibly written upon the hearts hose who sympathize most fully with the teacher in her efforts o good to the children under her charge. Let any man sit any in our Primary School room, where a large class are being

taught at once to read, spell, write, and even think, and eagerness with which the little ones bound along the gradu then if he is not stupid or purblind he will see the advants method over that of calling up pupils singly and have then letters by repeating them after the teacher. But this sorting requires an artist's head and hand. The primary teabring to her task professional knowledge and skill; she muthe animating soul of the school-room; must understand avenues of approach to the soul of childhood, and none bu accomplished teachers should be placed in charge of the classes in our Public Schools.

Truants.—The committee have met with unusual embarras perplexities during the winter, caused by a class of pupils wh spend their time loitering about the street rather than in room. Had the town made such provisions and arrangement ing this class of absentees as are required by law, it would ha the committee of considerable care and anxiety, and its be fluence would have been manifest upon at least one of o Schools. Whatever may be true of a general compulsory e system, there can be no doubt respecting the value of l prevent truancy and vagrancy. Some of the absentees schools the past winter have been such in spite of the parents. They have broken through parental control. growing up in ignorance, spending their time in idlenes ripening into criminals. An officer charged with the duty of all absentees from our schools without leave, would be by parents, and the mere existence of such an officer in munication with parents and teachers, would in our opinio most cases of truancy.

School Committee.-LEVI P. WARNER, ALBERT MONTAGUE.

#### WARWICK.

Selection of Teachers.—The selection of teachers is the portant duty imposed upon the school committee. A wel efficient teacher will succeed and maintain a good school all the disadvantages of meagre accommodations, lack of smallness of school, and under all ordinary conditions recontrol every tendency to insubordination; while a teac mediocrity in mental acquirements, destitute of a love for or tact in executing plans, is in a constant state of selfment, checks that enthusiastic love for study and progress vinstinct with children, and so not only becomes a dead we

success of the school, but by virtue of that destructive influence ch want of adaptation always develops, positively cultivates encourages unawares a spirit of contempt for both teacher school, which never fails to end in the total ruin of the school; the worst feature of such a condition is, that those pupils who er good discipline are managed with no difficulty, who are earnest mprove, and have the highest regard for a good teacher, become most contemptuous and insubordinate. As a universal rule, the et active and hopeful minds have the most utter contempt for all ms and failures. Stolidity and stupidity are easily satisfied and erally content under any circumstances. As a universal rule, osophically true, "as the teacher so the school," comprehends the ole matter.

our schools are so small, our means so limited, all our appliances nadequate to meet the real needs of our children, or the advanced hods of instruction which are now so universally employed, that teachers can succeed and keep our schools up to the high dard required by the progress and spirit of the age, only by the stant exercise of that degree of sound judgment, studied discre-, ready tact and wise adaptation, which we cannot justly expect n those so young and with such limited experience as most of our thers possess; yet the risk would be much decreased if the local mittees would make it a rule, with, if possible, no exception, to ploy teachers belonging to the town. For the past two years all se teachers who live in town have been successful, while those who e come from other places, with just a single exception—and that ther has taught so long in this town that she ceased to be a nger—have fallen below the general standard; and most of them e signally failed, chiefly owing to a want of knowledge of the ditions which they have assumed.

our resident teachers understand precisely what our schools require.

By are able to avoid all the mistakes which strangers almost ineviy commit. They can teach as well the first day and accomplish
nuch the first week as at any subsequent time. If local teachers
employed, strictly examined at least once a year, and then given
anderstand that when they fail to instruct well and govern judisly they will be removed, and parents do their duty, nearly all our
sol difficulties would cease.

For the Committee.-WM. A. P. WILLARD.

## HAMPDEN COUNTY.

### AGAWAM.

The condition of our schools for the past year has be signal advancement. We hazard nothing in the assertion far excelled those of the preceding year in general manage superior qualification of the teachers; in discipline and imp Thoroughness in teaching was a prominent feature. There a mutual good-will between scholar and teacher, which, to a degree, promotes the prosperity of schools. The teachers devoted to their work. They have by example evinced interest than many who preceded them, and have labored n fully to excel in every point. While comparison might be invidious, in our opinion there are seldom or never bette than the four in the west parish during the winter term. A cause of their prosperity, aside from the teachers and comm notice the interest taken by the resident ministers; and for pathy and aid, they receive the most grateful acknowledgme committee. We were happy to meet them at some of ou the schools.

In former reports we have spoken of the advantages wh accrue to our schools from gradation. No one can be so not to be convinced of the utter inability of one teacher sort of justice in a school of forty scholars or more, some are just commencing the alphabet, and others pursuing the branches. One of the greatest evils is a mixed school. It of time and money which ought not to be tolerated for a The only remedy is in graded schools, where those of new attainments can be taught by a competent teacher. We i tention to this point in our report of last year, and an effort to provide suitable accommodations for this purpose; but we say that our efforts failed. The attempt to secure the object needed, developed some singular facts. The heaviest taxmany instances, and those who had no scholars, and in t would be least benefited, were most forward in urging a consideration of the subject; while those who paid only a and have most scholars, and no other way of educating t -- \_

e who never sent their children regularly and punctually to any ol, were its most bitter and determined opponents.

e have a word to say in relation to the district system. We had ed that this vexed question was forever settled by the Act approved ch 16, 1869; but the pernicious legislation which followed, in , conferred upon the towns the right, under certain provisions, turn to the district system. A more unjust and mischievous Act, believe, never passed into a law. So great an obstacle, in our ion (in addition to all others with which committees are obliged ontend), never was thrown in the way of the advancement and perity of our schools. Its unequal operation was directly in the of all progress. From many causes the system had become obe. When it was first adopted, it was probably the best plan of taining Public Schools. But the circumstances which required its inuance have all passed away. At that time we had no centres which population found its way. But now, flourishing villages in the limits of old towns have sprung up as if by magic, while r portions of the same towns remain about the same. It has bee necessary to maintain more schools, to meet the wants of those are brought together by the inevitable laws of change. So, while e are now districts where there is a large number of scholars, in rs there is a small number. The people in the small districts (we k now in reference to our own town) demanded as long terms as e in the large ones; but the practice of dividing the money upon scholar, left a sum so small for the support of the schools in these icts, that the terms were short. To remedy this, the unjust sure was adopted of taking a large portion of the money from the e districts and giving it to the small ones; as a natural conseice, it cost eight dollars a scholar in some schools, and two dollars thers. But the abolition of the old system obviated all these ualities, and by putting the small schools together, the number diminished, and all were placed on equal footing with regard to th, and quality of teachers. The law allowing the higher ches to be taught where, in the judgment of committes, it was ned best, augmented the evils, because it deprived us of the means ecure the services of competent teachers. These branches were required in the small schools, and so the large schools, in which many scholars who otherwise might have pursued these studies, e deprived of the right and privilege by the unjust appropriation ne money.

this connection it is pertinent to notice the fact that at a meeting d for the purpose, in November last, the town voted to return to old system, but it was subsequently ascertained that nothing was

· done legally, and no organization was effected in any distr after a delay of four weeks, the committee were obliged to machinery in motion. Several vacancies occurred in the schools, and the uncertainty occasioned by the action of t rendered it exceedingly difficult to obtain good teachers, th engaged. We had decided to have competent teachers or n much time was spent and great expense incurred to find t was only by chance that we succeeded in filling the vacanci have spoken of the teachers and schools in another place. the old system was the best, why were there so many app for situations? Why did teachers who had been rejected by mittee apply to those who they supposed would be chosen p committee? Why was it that the usual amount of chicar manœuvring was set in motion, to place favorites in schools regard to qualification? Why was it that those teachers been rejected were so persistent in their efforts to get into the And why were they encouraged in this course by their r Did they suppose the committee would stultify themselves by ing those whom they had once, twice, and even thrice They knew we set them aside on the grounds of incompete for no other reason.

Now, it is true, and we defy denial to the assertion, that of to the new system comes from those who are most ignorant dessential qualities of a good school, and from those who are terested in the cause of education. And further, we aver fear of contradiction, that our schools have improved more, true elements of prosperity, since they were under the superthe town committee, than ever before. The discipline better, instruction more thorough, teachers far better qualified has been far less insubordination; the scholars have been muguiet about the school-rooms. We have not heard complaint point, as almost always heretofore. And during the winter have not heard of the complaint, once so frequently made, teachers were not qualified to teach every branch required Moreover, we have had (in the winter term) some more scholars than any who have before attended school.

School Committee.—SAMUEL FLOWER, CHARLES C. WRIGHT, JAMES H. FI

#### BLANDFORD.

One year ago, it was your pleasure to elect me Superint Schools. Of course, it was a novelty for a woman to assum position. At first, I shrunk from the task, it looking too for

after careful reflection, decided it was a providential opportunity o some good to the youth and children of our town.

thas been my privilege for a few years past to visit various schools different grades, in our cities and large towns, especially at the st; so I felt that I had not come to this work wholly unprepared. am compelled to say I found our schools much below what they had to be; some of the essentials for the foundation of a good come education have been sadly neglected. Many of the teachers emped in our schools for several years past have been educated in see schools, and have had no opportunity to profit by attending tools of higher grade out of town. As a general rule, schools ght by such teachers, successively, will degenerate. Those teachers who have had an opportunity to attend some Academy or Nor-School, and have a tact to teach, will succeed in bringing our tools to a higher standard.

We have had thirteen different schools,—one of three terms, eleven two terms each, and one of one term. In these schools we have bloyed nineteen different teachers, and some of them as good there as are often found in our country towns. Ten of these teach-have taught in our schools before this year. I think I am safe in ng, that not over one-third of the nineteen teachers have ever at-led any High School or Academy. Only four of our schools have the same teacher through both terms, and three of these showed amendable progress. We hope the committee will secure those there this spring, who will give satisfaction one year, at least, in all schools.

teading I found had been very much neglected in all our schools,—haps I should not say neglected, for nearly all the scholars were ling in books beyond their comprehension.

The truth is, the teachers (or parents) have wished to push their dren ahead, thinking thereby they were advancing, when really a were not taking the first step towards a good reader. I found see trying to spell out lessons in the Third Reader, that could read intelligibly in the Primer, and some trying the Fifth Reader, the should at least be reading the Third Reader. I am satisfied, this ming scholars on will never make them good readers. I am happy say, that those teachers who put the children back and drilled m on short lessons, saw great improvement. Very good attention been given to spelling, and with good results.

Superintendent of Schools.—Mrs. JANE C. ROBINSON.

### BRIMFIELD.

Although some of our schools have not been satisfactory de past year, others have realized our highest expectations, the generally, being as far advanced in some of the studies pu could be desired. The good have been very good, and conti perience and observation have strengthened the conviction system of instruction which we have labored to introduce, as is now becoming general, is well adapted to youthful min educate in the truest sense, when we draw out what is in the we fail when we seek to put in that for which there is no Hence, the first step is to develop ideas by the most simple a iar illustrations, and then to express them in the simplest l Language, of itself, often fails to transmit correct ideas. more convey to the scholar's mind a knowledge of the structu or use of the English language than it can teach him to be mechanic. Such eminent teachers as G. B. Emerson and Colburn asserted, years ago, that "grammar, if taught to an to the most advanced pupils, must be taught orally." They as the time usually occupied in learning to parse should be de studying the principles and uses of the language, and say, wh careful observer must have noticed, that "the most adroit often unable to write a single sentence grammatically." The is now sometimes called new was adopted by the highest : nearly thirty years ago, and circulated in every school in the private munificence.\*

If it be important to teach a child to think, it is no less so him how to express his thoughts definitely and readily. The of expressing ideas with facility and elegance in writing, has fore been but little cultivated in our schools. This faculty rare but a very desirable accomplishment, and the experience has proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved that it can be attained to a good extent by most proved the can be attained to a good extent by most proved the can be attained to a good extent by most proved the can be attained to a good extent by most proved the can be attained to a good extent by most proved the can be attained to a good extent by most proved the can be attained to a good extent by most proved the can be attained to a good extent by most proved the can be attained to a good extent by most proved the can be attained to a good extent by most proved the can be attained to a good extent by the can be attained to a good extent by the can be attained to a good extent by the can be attained to a good extent by the can be attained to a good extent by the can be attained to a good extent by the can be attained to a good extent by the can be attained to a go

We are decided believers in the doctrine of rewards and ments. We would punish only as a last resort, but we would every good act—every heroic effort. Kind words and a smiles cost little, but they are very effective. No objection made to material rewards, if they be judiciously distributed; should never be bestowed in such a manner as to excite any sion. We think it safe to say that no reward should be offerevery member of the class cannot hopefully and honestly conit. Offering rewards for the best recitations stimulates those very member of the class cannot hopefully and honestly conit.

<sup>#</sup> School and Schoolmaster.

stimulus and discourages those who do. As we recall the long by of doleful countenances, without a shadow of hope or expectaof gaining the prize, that have ever been found at the foot of r classes, we feel that the head may properly be the post of honor the best deportment, but not for the best speller. If a scholar be ortunate, charity would compel us to give him a position where he, least, would not be as conscious of his deficiency. If our schools not elevate, they must not depress.

We earnestly recommend that the town take some measures to se trees to be set upon their school grounds. By such means we utify our homes and make them pleasant and attractive. Why not someonet those sacred precincts where our children get so many their first impressions? Why leave them bleak, barren and desonas an ancient churchyard, exposed to the heats of summer and its of winter, when a few dollars or a little personal effort will see them attractive and comfortable for generations? Can our children ever be correctly educated while surrounded by such deformant.

School Committee.—J. L. WOODS, W. F. TARBELL, F. D. LINCOLN.

### CHESTER.

The removal of pupils from the school a few weeks before the close the term, is a practice by far too common in this town. The time is lost is that which is usually devoted to a general review; and pupil who loses the final review, loses at least one-half the bene-of the school. In some cases, the pupils are removed on account a dislike toward the teacher. It is useless to argue on the folly of a course, for the person who would thus inflict an injury upon own children, to gratify a spite against a teacher, cannot be ched by argument.

The custom of providing board and fuel, by voluntary contributions in the people, has become almost obsolete. We regard this change in improvement. The advantages to the teacher of a fixed board-place, instead of "boarding around," are considerable. Besides, sonly justice that the expense of our schools should be borne by town and raised by fair taxation.

School Committee.—C. M. Bell, I. L. Bond, Joel Habkins.

### CHICOPEE.

t the beginning of the year we introduced the study of drawing; which, by legislative Act, that study has become a requisite in

the Common Schools, and we are happy to say that, after a ye our anticipations have been realized in regard to the important measure.

Feeling deeply the need, however, of an accomplished the two departments of drawing and writing, who should time exclusively to these branches, and circulate throug schools, taking the general oversight of the drawing and writ and aiding the teachers in this work, we were enabled at a ning of the second term to secure the services of Mr. G. who, by his accomplishments and devotion to his work, has a most gratifying change in these two departments of educations.

The writing books, as a general thing, show, both in their pearance and the correctness and uniformity of the writing vantage of the mode adopted by the teacher, of having to class move together, making the same part of the same let same time, at the word and under the eye of the teacher. The advantages of this mode of teaching must commend them every thoughtful mind.

The drawing, considering the time that has been devoted reached a very satisfactory result. We anticipate much ple profit from this department of education, and earnestly hope time is near when ability to draw neatly and with facility wi an essential qualification for teachers in our Common Schothat teacher who possesses the skill to promptly and artistical upon the blackboard any familiar object, a piece of furnitur mal, tree, flower or house, possesses an accomplishment that measurably enhance her worth as a teacher in any school nothing of the practical utility and personal enjoyment to be from the acquired skill.

We feel, therefore, in view of the experience of the past the drawing and writing teacher has contributed greatly to perity of the schools, and are prepared to speak both of his work in the highest terms.

The question of appointing a Superintendent of Public Sonot, to our knowledge, ever been brought before the town if It has long been the opinion of some of the more thoughts those who have been the most conversant with the schools wants, that a superintendent of the right stamp, who coun his whole time and energy to this department, would suppliciency long felt, and greatly add to the efficiency of the school opinion has been gaining until, if we read the public senting rectly, it has become quite general. We are not indifferent

estion, but are unanimous in the opinion that the growing sentint in favor of this measure will soon demand its adoption.

School Committee.—H. HITCHCOCK, E. B. CLARE, CHARLES SHERMAN, J. E. DAVER-T, JOHN S. HERRICK, B. B. BELCHER.

#### LONGMEADOW.

Under the old district system there were insuperable difficulties. e double-headed plan of two committees defeated all unity and manency of effort for the improvement of the schools. But under present system, there are no difficulties that due consideration an enlightened judgment may not easily overcome. If you think at as good or better schools can be secured with less money, the nedy is in your hands precisely as it used to be. You can lessen ir appropriations. If you have not confidence in the discretion of ir committee, you can replace them by those who may be, in your gment, wiser men. Probably not one of them would feel aggrieved. l if he did, it would not matter much. Nothing would ensue like late scene in the United States Senate. You can change your ool committee as you like. There is no necessity for constituting m a nominating committee when vacancies are to be filled, nor of epting their nominations, if made.

f you desire to have each locality that used to be a district personrepresented, you have only to enlarge your committee to secure t end.

There is no possible hindrance to the success of your school that not be got at and removed with ease and dispatch, under the pressystem. All we want is, to have the real or imagined hindrances I defects pointed out and discussed. There is nothing that your amittee need and desire more than that all their plans shall be roughly considered, and that there shall exist between them and ir fellow-citizens the fullest and freest interchange of views.

f anything goes wrong, or is likely to go wrong; if there is any abt in the minds of any about the wisdom of appropriations that recommended; if there is any apparent lack of fairness in the related appropriations for school-houses, let the committee be made are of such doubts,—let us know every suggestion and every critim. We are only your executive, and we shall thus be able to serve a better. Only let the questionings, suggestions or criticisms of refellow-citizen, whether in public or private, be made good-natedly, frankly and explicitly. We sometimes hear vague and blind to about a school or a teacher, which seem to indicate that someong is wrong, more or less. But we cannot tell whether it is more

or less. Such hints, and especially if they are thrown out or snappish manner, only perplex us. They raise a sort of smoke, which confuses us. If we only knew where the fire would like to put it out. But in the blindness of the "way dark," we cannot do much to relieve the apparent dissatisfact

Normal System.—A prejudice exists to some extent ag is called the "Normal System." There is no such system of prescribed by law or custom. The principals of our various Schools are left as free and independent as any other teachers are expected to make the "art of teaching" a specialty. No contents of the books, but the art of communicating ideas porating them as the real possession of the mind of the pupart also of educing them from his mind in clear and fitting expression—in other words, the art of making him to keep than to memorize, and to tell others what he knows.

A "Normal" teacher may fail of being a good teacher, but average number of those who have been specially drilled in teaching in our Normal Schools succeed, than of those who, else educated, have not had this training.

School Discipline.—While all parents admit the important order, and are perfectly willing to sustain the teacher in dethe children of others, they are often unwilling to permit children to be corrected. They are often too willing to child's version of any supposed ease of abuse, without taking ascertain the exact truth. Transgressors, whether young disposed to mitigate their offences and magnify their pure when brought to justice they are apt to think themselves at even when corrected by their own parents, they often compunishment more severe than they deserve.

Parents ought to remember that their children are no competent judges of their deserts. If you have good reaso your child has been abused, go to the teacher and you wascertain the truth. Except in cases of gross abuse, it is was for a parent to intimate to his child that he has been have with by the teacher. It inflicts an irreparable injury upon and upon the school. Those parents who are forever has children abused at school, and taking them out of school, and to blame for the insubordination of their children than the themselves. And their children will certainly be poor sed disorderly scholars. The presence of a very few such in an enough to make it extremely difficult, if not impossible, to good order. Two or three disorderly pupils exercise a correction.

nence upon those who are disposed to do well, and the whole school occurs infected and difficult to manage.

For the Committee.—John W. Harding, Albert I. Dotton.

### LUDLOW.

Our School-houses.—It may be said that this is an old story, but a long as the two largest schools in our town are obliged to occupy addings worth less than one hundred dollars each, the town may spect that their committee "will keep it before the people," until itable accommodations are provided. When houses, and even barns our town, are frequently built, costing from one to four thousand ollars each, there certainly can be no excuse for further delay in adding two new school-houses, and in putting the others in good ondition.

The Raising of Money.—When men of means, and of large prensions to patriotism and an interest in the welfare of the young, are illing to raise but twelve hundred dollars for a year's schooling of to hundred and fifty children, divided into nine schools, those in oderate circumstances, who have children to educate, may well be atteful that the State, and not our town, enacts its school laws. complaint is frequently made that the population of our town is diinishing; that while many of our young people are leaving, but few e coming in to take their places.

When we consider the condition of our school-houses, and the nall appropriation for the support of schools, no one need be surised that such a state of things should exist. It is for the interest of e town, financially considered, to make its school-houses, with their rroundings, as neat, comfortable and attractive as circumstances ill admit.

Good school-houses, as well as churches, and all public buildings, and to enhance the value of real estate in all the surrounding committy. Your committee would respectfully, but earnestly and pertently, urge upon the citizens of our town the importance of raising sum of money sufficient for the support of all our schools three rms the present season.

School Committee .- C. L. Buell, Adin Whitney, James O. Kendall.

### MONSON.

School Examinations.—The duties of the school committee reire them to attend school examinations, and to visit every school at ast three times every term. In so doing they are supposed to ass for the public. But the public ought not to be so absolutely ing as they are in too many instances. Nor is it the duty of only to visit the schools. All persons of all occupations and pare vitally interested in the Public Schools, and should there come familiar with them by actual inspection.

An agricultural festival will call out the community, old and to inspect a show of poultry and pigs and fast horses. A gam will attract hundreds to witness a match effort, not of mind muscles. And the monstrous assumption of absurdity is by s mitted, that such games are in the interest of physical exer development, when the fact is, that hundreds simply look lounge, while nine gamesters on a side furnish physical exe the principle of imputation, for the benefit of the whole comp the community.

Why will not the public take an interest in matches of Why will parents go to neighboring towns to admire the figrowth of dumb beasts, and neglect utterly the intellectual gratheir own children as a matter of no personal concern?

Why shall citizens interest themselves in common roads and in common homes for the poor, in common burial-places for the and give no concern to the Common Schools, where immorts are trained to habits of correct thinking and fit expression, and behavior?"

In behalf of the School Committee, -C. HAMMOND.

### PALMER.

In the opinion of your committee, facts plainly indicate, the mildest possible term, a duty not performed. We do for a twelve thousand dollar appropriation, though we hadoubt it could be advantageously expended. But we do den behalf of our youth—not as a favor, but as their right and our a sum of money large enough to enable us to place at the heaschools first-class instructors, not mere amateurs, incompetent b or pastime seekers, but earnest, honest, capable teachers. T with which this happier state of things may be attained, make a shame of our present position all the greater.

Another thing needed, in order that we may do our whole the establishment of a school of a higher grade than any we ent possess. It matters not how much attention we may pay Primary and Intermediate departments, it matters not how not fection we may bring our Common Schools,—these all-imports series of undeveloped powers, that endow the future with gran

ities,—we merit not the "well-done" of our consciences, unless we ovide for the continued education of our advanced pupils, the gradtes of our Common Schools.

What is needed is a High School, in fact as well as in name,—an attitution which shall offer to those desirous of obtaining a liberal ucation all the advantages aforded by the neighboring Academies. High School which we maintain fulfils the letter of the law, but comprehends not the spirit.

To make our High School what it should be, and thus obviate the fortunate necessity that forces those desirous of a thorough and tical knowledge of the higher branches of study to become students the Academies of Wilbraham and Monson, is clearly our first duty. erefore your committee would recommend the selection of some ntral location, suitable for the purpose, and the immediate erection ereon of a building to be used solely for a High School. Let the mpletion of the edifice mark the inauguration of an efficient school, le to compare with any in the State. As a connecting link between e Common Schools and the College, High Schools are a necessity. an auxiliary to both, they are invaluable, and in the plan of liberal ucation they form an important part of the symmetrical whole. In king this proposal, we are encouraged by the belief that our porit will be acknowledged to be a correct one, and that the intellince and foresight of a majority of the voters of Palmer will lead m to adopt the course we have recommended.

Chairman.—SILAS RUGGLES.

### SPRINGFIELD.

Apart from the Training School, where changes at least once a ar are expected, there are only ten teachers in the schools now who re not here a year ago, and of these ten, at least three or four are addition to the number employed. The advantages of this greater manency are apparent. The teacher gains a knowledge of each incidual pupil; knows his habits, tastes, the excellences and the dets, the strength and the weakness of his character, and, knowing em, knows how to adapt himself to the pupil. The pupil also knows teacher, and renders usually a cheerful, hearty obedience in rem for the love and kindness bestowed upon him. Hence, the suchs of a well-qualified teacher becomes greater term by term, the distince more easy, the instruction better adapted to the pupil and the report to corporal punishment of to measures of severity less and less frequent. This can hardly otherwise, for the relations, at least so far as the feelings of the

pupils are concerned, and to some extent, doubtless, of also, become changed. When the teacher enters the sch stranger, the pupils feel that he has come into their school are oftentimes disposed to show what can be done in their to see what can be done in his; but, as term by term a year new pupils come under his charge, they come into his he into theirs.

In the Primary Schools, a large part of the instruction orally and by object lessons. Oral instruction also enters l our Grammar Schools. This the "Course of Study" requi best interests of the schools demand. The teacher must give instruction in the science of common things,-in phi chemistry, in physiology, not in their technicalities, but in ing upon life. And this he must be able to do without t his hand at the time. A candidate for a teacher's respons reply to the suggestion that her examination showed a w proper qualifications, innocently remarked that she shou difficulty in the recitation, for there she should have a book time for that kind of teaching, if teaching it may be calle by, and the teacher is expected to know whereof he affirm school committee, people, or pupil will be satisfied with who, unless he has the book in hand, knows less of the s the pupil reciting. If a class of geography be before him, be able to draw a map and locate the places under consider perhaps to take his class on board an imaginary ship, as places named, and, when the time allotted has expired, or to resume his voyage another day. If it be a class in h the lesson be an account of a decisive battle, he wants from sources of information within his reach, to supplement pupil has learned, and thus give a better and more vivid If it involve the action of Congress, or a history of an tion, as much of our own history does, he should be able at time to unfold somewhat the principles of our government the different departments, the duties of the various officers is necessary to a correct understanding of the lesson, and, this, is a thousand-fold more important to an American cit knowledge of the exact location, population, latitude and Zoar among the mountains. If it be a class in percentage, must for the time being convert his school-room into a pla ness—the insurance office or the broker's, the commission l banking room—and, standing there with his pupils, make t stand the business transactions which give rise to the pro find in their books. There is a great deal of work in this ur teachers are doing this work with constantly increasing success. an Act of the last legislature, drawing is made a required study our Common Schools, and is placed upon the same footing as penship or arithmetic. It was accordingly introduced last summer n, without extra expense for instruction, as no special teacher is ployed. The parties interested in the system used, sent a competeacher at their own expense, who met the teachers and gave m instruction, who also met their schools and gave the opening less, and since that the teachers have given the instruction. Many of m had given the subject no special attention before, but with the of a manual well adapted to its purpose, and especially by doing work themselves, they have been able to overcome all obstacles. s not expected that we shall make artists of many of these pupils, ideed not any of them; that is not the design. To train the eye to and the hand to draw a straight line is no easy task, and the abilto draw such a line is no mean acquisition. The pupils have had than a year of instruction and practice; they have not yet comed their first book; but already the benefit is seen in their imved map-drawings.

The same legislature required cities of ten thousand inhabitants to ntain a school for adults—a School of Industrial or Mechanical awing; and to comply with this requirement, a room in the city has been fitted up and a school opened. It is placed in charge of C. A Emery, who is assisted by Mr. E. P. Hemenway, and is yet dly in full operation.\* More than one hundred have given in their ness for this school, most of them mechanics, and their ages range in fifteen to fifty years. It was the intention to give each pupil to lessons a week; but so many have been the applicants, making so my divisions of the class necessary, that for the present at least, y one lesson can be given.

The passage of a law requiring free-hand drawing to be taught in schools was recommended by the State Board of Education. It is committee on education reported favorably, the legislature sed the bill, and the governor approved it. These various parties ught the proposed instruction would be of such advantage to the large and youth of the Commonwealth as to give them an equivator their time, attention and labor. And yet there are parents to know that it will do their children no good. And this in spite the fact that such and so many persons hold the opinion just expected. But of what worth are mere opinions when placed side by a with positive knowledge! They know this, in spite of the fact

that it is not always easy to see with perfect clearness we tastes are, what his occupation, what his means of livelihing years in the future may be. They know it in spite of the many of all ages and of so various trades and employment tered the draughting school, eager to gain that knowledge not placed within their reach in their school-days, the need they feel in every-day life. What a comfort it is to know

The Training School is doing its work, teaching a litt two hundred children, and fitting teachers for the instr government of other schools. No less than ten of the te cessfully working in our schools, have spent a longer or a s in the Training School.

The Half-time School has been crowded out of the new the Orchard into the old one; but it presents even a strong live than at first; for it now holds all day, one part beint teacher in the morning, another in the afternoon. Still doubtless some children of school-age in that village who of the law's demands in the matter of attending school. The Evening Schools, the one in the city proper, the other at the Orchard, occupying two rooms, in charge of Indon and Richardson. While these schools are to some e a substitute for the day school by some who ought to be school, they furnish to many the opportunity of acquiring ments of an education which will be of great service to which they could not obtain elsewhere. There are about pupils in each of these schools.

In former reports I have urged some better provision f ant School, and I trust I shall be pardoned if I again urge i and state with some detail things desirable for such a school

The school is intended to have an effect not only upon sent there,—to reform them,—but upon the schools of the vent truancy; and any estimate of the value of this sch comparison of cost and production, which leaves the other of the account, as is sometimes made, leaves out an essenti In estimating the value of a house of correction, we mignore the safety of a citizen and the good order of society

But to reform the boy and make him a good citizen taught, for truants are mostly from the lower grades of of Hence he needs a teacher. He needs also a matron—one be to him a mother, and give him a warm place in her heart of the truants know as little of a mother, in any just sense of as Topsy did. The teacher and the matron may or may not

e same person. He needs also a home—the family, with its social, al and religious influences; for whatever may be thought of the al element in our Public Schools, in a Reformatory School this ent cannot be set aside. He also needs to be furnished with k, something adapted to all seasons of the year, partly that he learn how to work, partly that he may lessen the expense ined for him, partly that he may form habits of industry, but princias a moral element in his reformation. He needs, also, a guarship better than that furnished in a majority of cases by his natural dians, a guardianship that shall decide whether to bring him bethe court for trial, whether upon his reforming application shall hade for his discharge before the expiration of his sentence, and to for him and help him to a home at the time of his discharge. is necessary for the truant. For the sake of the schools it is necesthat there should be room enough for all the truants—otherwise e inclined to truancy will, even with their small knowledge of nematics, calculate the chances of escape—and room enough, so as long a sentence can be given them as their best good requires, then a moral certainty that all habitual truants, girls as well as , will be sent there. There should be also truant officers, men love children and will try to save them, men who know how to oach other men, and who will visit the homes of the absentees, seek to prevent their becoming habitual truants, and who shall g in the finally incorrigible. Now, it is perfectly obvious that ly a tithe of the things required can be obtained as the school is situated. Is it, then, too much to ask that the city seek at once rovide the necessary accommodations? I say the city; for if the makes the necessary provision, the responsibility and the control be near, direct and single, and those having charge of it could v it personally and intimately. There is no call for a great instion, for an immense pile of brick and mortar. Family houses capaof accommodating from twenty to thirty pupils, a farm adapted to ourposes required, a workshop for the winter work, a matron and ner, and all under one general supervision, would be all that d be necessary. Should other towns in the county, as some tless will, wish to avail themselves of the advantages of such a ol, such legislation as would enable them to do so could easily be red. There are other considerations, pertaining to the aged, the n, the poor at the almshouse, which are, to my mind, sufficient e for the removal of the school; but others have presented them. nere is another evil closely allied to truancy, and out of which ncy grows so naturally and so generally, that it and its remedy t to be spoken of in this connection. The evil is either nonattendance at school, or frequent absence by permission of the remedy is compulsory attendance. Fifty years ago, ing parents to send their children to school would have much out of place, in New England, as one requiring peo They were eager to have their children secure the full b school term, altogether too short for the education sough times are changed. A large class of our citizens do no learning as our fathers did, and the opportunity for child for fair wages, bearing upon the cupidity or the poverty o either keeps the child out of school entirely, or consents to whenever he can find work. But why should not a pa quired by law to send his children to school as many m year as that town is required by law to maintain a school sory attendance for a part of the year is already recogn but it seems to be based upon the child's right to an e the State's need of an educated citizenship.

Such are the laws with reference to the employment o factories, etc. But in the establishment of a Truant Sch and compulsory attendance are recognized, based do truancy as a crime. But does not the course pursued by tend directly to make the boy a truant? There is no hor that makes attendance at school a duty. The boy is all away from school on the slightest pretext. If, then, thither, he learns of some show he would like to see, or to post bills, or scatter notices, and so secure a ticket to pian performance, for all of which he would have obtaine to be absent had he known of the occasion before he lef should he not take the responsibility into his own hands sights? If there be a muster of some kind upon the Pa terest of good morals, or a horse-race, politely called a t in the interest of agriculture, the child is taken from s may sell cigars, or peanuts, or something worse, and so n When one child of a family has work, in a factory for another attends school, if sickness come to that househo one must take care,—if the mother goes out to wash, a must "mind the baby,"—if the father's work is more some one must carry the dinner,—the child at school one," not the child at work. And this is done oftentime poverty from the door, but for larger deposits in the bank

Make it a greater pecuniary loss to take a child from from the factory, and we not only prevent the permitted we create a home sentiment that will go far toward truancy. gain, the law does not take a man's property, or allow it to be a, without an equivalent rendered. A note is not legal unless it ain the words "value received," and if the person who gave the can prove that there was no equivalent, he can successfully resistment. On this same principle, may not a tax-payer demand, as an valent for his school tax, that the child shall attend school? He built a school-house, he pays the teacher. His property has been a, but where is his equivalent? Not in the school-house, if the does not enter it. Not in the power of the teacher to influence child for good, if the child does not meet the teacher.

as the parent the right to keep the child from school for the sake in, and thus compel the loss of the tax paid? But it may be said parents actually need the help of their children, and that without ley must receive help from the city. This is doubtless true in cases. But the tax-payer, the State, and the best interests of child demand that he shall attend school, and our laws do not inthat any child shall be deprived of school privileges on account everty. Then let his attendance at school be secured, and though a may be higher taxes, there will be more intelligence, less povand a better state of society generally.

uperintendent of Schools.—E. A. HUBBARD.

2.7

# WALES.

is difficult to get good teachers to teach in such houses in wins some of ours are. We feel almost ashamed to ask them. To sh good houses and teachers is not the whole duty of the parents. y should sustain their teachers and follow their children with sympathies in their daily task.

o make our Common Schools the means of preparing the rising ration for the greatest usefulness, is worthy the ambition of every en. The pupils are soon to fill our places, and whether with honor shonor depends in no small degree upon the training received in school-room, as well as at home. Parents should visit the schools, encourage both teacher and scholar by so doing.

some of our schools not a single parent has visited during the term, yet they clamor for good schools. Take hold and try to such; visit the school and let the teacher see that you are anxious he welfare of your children. Encourage, rather than discourage our absence and coldness.

one school, at least, we feel much more might have been accomed had the parents labored with the teacher; they need not make eat effort to have a poor school; now and then a word unfitly

spoken before children will secure it, while a word wisely help to make a good school.

School Committee .- H. A. McFarland, D. F. Parker, J. M. Lyon.

### WESTFIELD.

And your committee, in what they deem in furthera duty, desire to call the attention of the town to truancy fr and a remedy for the evil. In a republic where the sover is vested in the people, but who are required to delegate temporarily to others, to return again to them, to be again the electors should be universally educated. Our legis long felt this necessity, and first provided for Public Sci public expense. Since which time, various measures have in the direction of compulsory attendance upon the school measure has yet reached the evil. And as the populati and towns increases, the evil of truancy seems also to incr It is possible, however, that the legislation of the State ha up to the importance attached to the question by the peop At least it would so seem, when we come to examine the the truant laws now on our statute book. The law alrest that "every person having under his control a child betw of eight and fourteen years, shall annually, during the cor his control, send such child to some Public School in the in which he resides, at least twelve weeks, if the Public the town so long continue, six weeks of which time shall utive; and for every neglect of such duty, the party offe forfeit to the use of such city or town a sum not exceed dollars." (Chapter 41, Section 1, General Statutes.)

But very little attention, so far as we know, has ever be the above requirement by other towns, and none by our or is quite possible that the majority of persons having control between the ages of eight and fourteen years, who neglect with the law, are not aware of its existence or the penal to it. But the law, while it is severe enough in its penal the duty of prosecuting for the offence on the treasurer of the duties of this officer are entirely foreign to a service of and as he is the only person authorized to institute proceed be seen by the second section of the same chapter, the law or quite valueless. The power to make the law efficient placed in the hands of the truant officer, with authority in committee to suspend proceedings, if the circumstances such, in their opinion, as to make it advisable. There can

children from a certain age to a certain age should be compelled tend a Public School, or be furnished in some other way by their its or guardians with certain educational advantages. The age inority is an age of pupilage and discipline, an age for moral and ectual training.

hat we desire to say is, that it requires some education, some ing, some thought, to bring a man up to that intellectual standequisite to appreciate the rights of others, and to properly conimself. But you cannot at once tame the ox to the bow, or the horse of the prairie to the harness. Both are made subservient e wants of man by a slow process of training. A man is no fit to enter upon the active duties of life, without a previous ration, than the untamed ox for the plough, or the wild horse for wner's carriage. The law may attempt to restrain such a man, lo so by physical force, or grated doors and stone walls; but the aint is all external, and when removed, he is released only to be restrained. What is needed is an internal restraint, applied by ndividual himself. But it is difficult for a man who has grown nrestrained, from his infancy to manhood, to apply to himself estraint. External restraint must be applied by parents, guarand teachers in the earlier years of a person's existence, if we d have him apply to himself self-restraint later in life. But only restraint should be exercised by others over the young, in any as will insure their attendance at school, good behavior when , and diligence in study, with such lessons in morals, in neatness propriety as may be necessary. Proper direction and instruction upply the residue.

w, while a majority of the children in this town, and the State between the ages of five and fifteen years, attend school a part e year at least quite regularly, there is a large minority that selor never enters the school-room. This class fills our jails and entiaries; this class is a moth upon the industry of others, a dead nt upon society. This class is made up of children whose parents gardless alike as to the future welfare of their children or the nce they may exert on those around them. Now, the only way crease this class is to compel by law (and to put the law in exen) the attendance of children upon school from a certain age to tain age. If the parent is too poor to furnish books for his child, act should be made known; if too poor to clothe him, this fact d be made known also; and books or clothing or both supplied ight be necessary. If too poor to otherwise support him, the would of course pass from the control of the parent to the conof the town or State authorities. This town (and the case is the same with many others), increasing from year to year in its cannot afford to allow one-fifth or one-sixth of its children in ignorance and vice. The whole number of children be and fifteen years, as returned by the assessors this sch eleven hundred and thirty-one; while the whole numb attended school is only ten hundred and thirty-five. This far too large. It proves that our school system is not We have, in addition to the law already quoted, one (see of General Statutes) which punishes habitual truants, and the only law upon the subject which has any force. But only for the infliction of a penalty upon the child. In the cases it is the fault of the parent, and not the child, that t not in attendance at school. The parent should in all ca looked to, and if the child is found incorrigible, unman should then be dealt with. The truant officers should in empowered to commence prosecutions under proper restr then held responsible for not discharging their duty. If officers were held as strictly to their duty as sheriffs and th we should find the number of non-attendants upon our sch decreasing. The sooner legislators and electors awake and provide effective compulsory measures to the end the from a certain age to a certain age shall attend a Public some other, the sooner will crime decrease, and the more be our public servants, because they will be aware that th intelligent public to scan their acts. One-half the corrug civil affairs exists at the present time because the people s to detect its source, and hence do not know what remedy

Drawing.—By an Act of the legislature of 1870, drawing to be taught in all the Public Schools of the Commonwer committee believe this legislation wise. And though it we to extend it into all the schools of the town, your contappy to say they have made a beginning, and that a class in the High School, under the supervision of Mrs. J. We whose skill in the art is not easily surpassed. It was not a your committee, when application was made to her, that could be obtained, but, in view of her interest in the High most cheerfully accepted the labor.

Mechanical Drawing.—In addition to perspective draw law requires the cities and towns with ten thousand in teach mechanical drawing.

The school committee of Springfield opened a school for drawing last winter with great success, and as the pe

cown approximates so nearly to the number which makes the compulsory, it would seem highly proper that such a school d be opened for the benefit of our mechanics; but your committon the feel at liberty to open such a school without an expression e part of the town.

seachusetts, with a hard and sterile soil, cannot compete with reat West in agricultural productions. And if she would mainher present relative importance in the Union, she should lend nergies in the direction of mechanical and manufacturing interand to do so her young men should have the best mechanical ation; but how can they possess it without a knowledge of anical drawing?

hool Committee.-M. L. Robinson, J. G. Scott, Henry Fuller, P. L. Buell.

# HAMPSHIRE COUNTY.

### AMHERST.

imary Schools.—For the earlier lessons in drawing, or until the has acquired considerable manual skill, slates will answer every ose of paper, and are far less expensive. As the expense of putinto the several rooms slates of any of the approved patterns for ary use is slight, and this is the only sure means of providing pupil with one, I would recommend that it be done at public exe. Again, those who are to instruct in the schools must be ughly furnished and qualified for this new department of their . No novice, with eye uneducated to judge of form and diswith accuracy, and hand untrained to obey the will, is prepared ach it with success. If a teacher is approved in other regards, and irous to continue the exercise of her gifts in the sacred calling, let t herself in this respect to meet the increased demand of the age. e lack the skill, or the professional enthusiasm to do this, in rous compliance with the requirements of law and public senti-, easily as it may be acquired, and invaluable as it may be to her l her school-room work, she has surely mistaken her calling, or nued in it too long. In either case she should at once give to one who in all respects is determined to keep abreast of the

insure systematic and valuable instruction in drawing, as also rip handwriting, and other incidental branches to which allu-

sion has been made, our course of study for the Prim should, in my judgment, be revised. The present one, general in its terms, leaves too much to the discretion of Experience has convinced me that a majority of teachers definite guidance, and that in order to secure uniform reseveral schools the programme of study should be full a The precise manner in which everything is to be taugh no means be so indicated as to trammel the teacher, but very clearly to define what shall be taught, and, so far how often taught. In this way, and in none other, caretainty and system in instruction, and the desired unresults.

Intermediate Schools .- Map-drawing from memory, se a characteristic in the system of Guyot, has been better and appreciated by the teachers, and consequently be This feature of the study, beside its invaluable aid in imp of location, distance and physical conformation upon the child,—assists greatly in another respect. It gives him progress. He sees that he is doing something, that he is and this every child must be conscious of, to be interest dious. Assign him a page of arithmetical definitions a memorize, and he loathes the task. He sees little mes words, and still less profit in making them his own. B problems to solve, something upon which to exert his po ducing work, work that has progressive steps and an ultim result, and he will toil over them with delight. So is it of geography by map-drawing. The lesson of to-day is u to-morrow of river basins, mountain systems, climate or rents. The pupil collects and groups the facts that per topic by a natural principle of association, in preparation tation. When the hour arrives, he is called upon to repre the class the knowledge he has gained. Crayon in hand must cause a continent in outline to stand out from the su blackboard. To-morrow he traces in chalky meandering of its rivers, or runs the indented coast lines of its islan solitary or in groups. The next day the location and e lowlands and plains are indicated by their appropriate again by the accumulated and heavier movements of hi brings out in bold relief its grand old mountain chains. H gressive steps from the beginning to the end. Finding reproduce more to-day than yesterday, and that his handiv exactly true to the original, as pictured in his text-book, I that he knows more, and is animated and inspired by t ]

mount and variety of geographical knowledge, and the minuteand accuracy with which pupils have been able in this manner hibit it days and even weeks after acquiring it, have been most ying, and demonstrated most conclusively the decided merit of ew over the old methods of treating and teaching the study. perintendent of Public Schools .- H. L. READ.

### CUMMINGTON.

e are required, each year, in making school returns to the Secreof the Board of Education, to give the estimated amount of contributed by the districts. This is about five hundred dollars resent year. Why should not this amount be borne by the taxs as well as that paid directly for wages instead of throwing it y upon those who send children to the schools? We believe tention of our laws is to make the schools wholly free by draweir support from the taxable property of the town. The present n in our small schools makes the burden a heavy one for some ought not to bear it. One instance the past year: in a district seventeen families only five patronized the school; and of these our boarded the teacher. This school was maintained twentyveeks and the entire board was with four families. This may be treme case, but we do not think in the whole town more than alf are called to support our schools in this way. A still stronger , if any is needed, is found in the relief given to teachers who ostly females. The distance they are obliged to travel in stormy Il as pleasant weather is all we need to add on this point. As we adopted the district system again and are to have prudenommittees, while the present custom of boarding is retained. hould feel it their duty to see that suitable boarding places are diness for the several teachers. Another duty of prudential ittees which is often neglected, is that of making arrangements ilding fires, so that at nine o'clock each day the house is proparmed, and the school can commence at once.

ool Committee.—Lucius C. Robinson, Thomas Porter.

### GRANBY.

notice the remarkable fact, unprecedented in this town we e, that in the third district—Miss Helen Kellogg, teacher—onee scholars have not lost a day the past winter, and not a scholar d a tardy mark during the whole year.

raised last year by taxation nineteen hundred and twenty-five

dollars for our schools, and this would give nearly twelve dollars and fifty cents for each scholar between the ages of five and fifteen. Judging by the educational tables of the State for preceding years, we doubt if this amount is equalled by any strictly farming town in the Commonwealth. The record of past years also shows that the town has graduated at our colleges and higher seminaries a large number of her sons and daughters, a very large per cent. comparatively. Is there, then, a growing indifference to the interests of education among us? The amount of money raised for schools surely does not indicate it.—visitation of them on the part of parents does; as also this fact, that not one of our Granby boys is now in, or fitting for, college, a condition of things, we venture to affirm, that has not hitherto obtained in our history. For this anomalous condition of educational interest among us there will probably be different theories. Some doubtless suppose—or at least indicate it by their action—that when they have voted liberal supplies for the support of the schools, their responsibility ends; that the committee and teachers in the performance of their duties will do the rest, not ever imagining that an occasional visit from them would be a healthy tonic to teacher and scholar, encouraging and stimulating both.

If a circus visits a neighboring town it is sure to draw a larger number of parents (male)—though we hesitate at introducing the parenthetical word—than all the school examinations of the year. What does such a fact speak? that the clown and sports of the ring. athletic performances and pedal dexterity possess more attractions for such parents than the "busy hum," the mental activity and agility of their children in the school-room? And what of that other fact alluded to, that there is a falling off among us with reference to a higher and more liberal culture? Are the boys and girls among us less promising, intellectually? Do their parents place less value upon a liberal education than did their parents before them? Or is there less pecuniary ability among us to meet the expenses of a collegiate or seminary course? Or what will account in part or wholly for this fact? We believe that the boys and girls have as bright parts; that the pecuniary ability to meet the expense exists, and are, therefore, forced to the conclusion that parents do, as a whole, place less value upon a liberal education than those of preceding generations. In this practical, scheming, money-making age, when the "almighty dollars" have become our common "Penates," the parent imagines the shortest cut to wealth does not run through academic halls, and the boy catching the same spirit, talks of business rather than books, of counting-rooms rather than colleges.

For the Committee.—S. M. COOK.

# HADLEY.

A law was enacted by the last legislature, prescribing drawing as one of the branches to be taught in all the Public Schools of the Commonwealth. The wisdom of such a law seems clear to us. Hence a beginning has been made to put its provisions in practice.

The teachers of the Primary, Mixed and Intermediate Schools, have each been furnished with a set of drawing cards, with a view of giving lessons from them upon the blackboard, which has been done in some instances, with considerable success.

In the two Grammar Schools, Bartholomew's Lessons in Drawing (first book), have been used for a simultaneous lesson of fifteen minutes or more, three times a week, with gratifying results, especially in the Central Grammar School.

We believe that drawing is scarcely less important than writing. They are kindred branches, differing little in respect of ease or difficulty of acquisition, and acquiring one is an aid in acquiring the other.

Although our schools speaking in the general were never better, within our knowledge as we judge, we are aware of defects that are the reason for regret in the minds of all good citizens and call loudly for remedy and improvement.

A chronic and insuperable difficulty is the lack of teachers of the needed stamp. This has been brought to your notice. It will avail little we fear to dwell upon it. We would simply say, however, that we desire, as we are expected, to employ teachers from among ourselves so far as we may. In so doing we must needs take such as are to be had. Some of these are young, without experience or sufficient literary qualification, having no special aptness to teach, nor love for the work, nor training for it. Hence they enter the school-room at great disadvantage to learn how to teach. Some of this class do remarkably well and happily disappoint expectation, while others in these circumstances learn slowly.

There is need of better supervision. This important work must be given to busy men. It has been committed to those who have on them the cares and burdens of an engrossing profession, and who can give to this duty only intervals of time snatched from paramount engagements. It has been our endeavor to give to the schools such attention as is required of us by law, well aware that there is a lack of service that needs to be supplied. If more time could be given in this way, and this oversight be more vigilant and thorough, other things being the same, we might hope that our schools would be bet-

ter than they are. But any great change for the better in would involve the employment of a paid Superintendent, devote the best of his time to, this business. But this we gest as a recommendation likely to be complied with in stances.

Another evil in connection with our schools we wish notice strongly, in the hope that something may be done of cure. Allusion was made to this in the last report; w tion to it again. We refer to irregular attendance; th scholars from school at any and all times, in the middle This evil has, perhaps, never been so great as during the Some of this irregular attendance, during the winter es been due to sickness and of course inevitable. But muc must be accounted for otherwise. It must be laid to the our prime industry,—tobacco growing. Scholars are ke schools in great numbers to help in this business. The school at all seasons, in all weathers, to weed, drop, set, sucker, cut, hang, take down and strip tobacco. No char be made in the school terms that shall avoid the difficul fact or two by way of illustration. The morning of Mond was damp succeeding a rainy night. On visiting a numbe that day, we had occasion to feel and say greatly to our bacco is king." The register in No. 8 showed that the belonging to the school; we found 15 present; in No. 6, registered, 18 present; N. Hadley Primary, 61 registered, N. Hadley Intermediate, 54 registered, 29 present; N. Ha mar, 47 registered, 17 present; No. 4, 31 registered, 22 pr 255 registered, 144 present. Let it be marked, that of 47 N. Hadley Grammar School, 17 only were present, 30 about day, Jan. 16, was another day like the one just named. came under notice. Out of 40 registered in the Central I School, 21 were present; Grammar School, 40 registered, High School, 56 registered, 26 present; total, 136 register ent. Sixty-four absent on that day in these three schools of them on account of illness. These are samples; ratl cases let us hope. The like of this is liable to occur any year. We ask earnest attention to facts like these, the ca of their sure effect in injuring the schools permanently, t through, and not for the day merely. Thus classes are wh up. Some were found without one left out of a large class. of the school is thus sadly let down, the order is broken up study is killed, teachers are worried and disheartened. A such as stay out greatly injured, but those who are in school .]

greatly likewise. One such day in a school does mischief incalle; it lasts many days through a term; nay more, it is an injury admits no repair. Such a fact implies a low esteem of education, ends to educate the minds of all, teachers, parents and children, the undervaluing of the advantages of instruction which we proat such cost. Look at the matter and see if this be not a waste mey fearful to contemplate, though this is by no means the worst tof the case.

e ask attention to this matter in the confidence that the good as of the town will see that this is a crying evil that must be d. Men whose views are so enlightened as to the value of pubstruction, who feel a just pride in our school system, and vote I sums of money to support it, will surely be resolved that all not be spoiled in such wise as has been indicated. There is interest and wrong in this course that no gain that may accrue can ensate.

tool Committee.—R. ATRES, E. S. DWIGHT, W. H. BEAMAN.

### MIDDLEFIELD.

ce the abolition of the district system in town, the improveof our schools has been more general and permanent. All of have been of nearly equal length, and the best teachers that our is would permit us to procure, have been provided for them, as ants and demands of each seemed to require. Under the dissystem, eleven schools were established, four of which have provided for under the new arrangement, decreasing the aggreof expense six hundred and sixteen dollars. It continued six as, which is the legal length of schools. Two or three of our is are yet too small to be profitable, costing the town about the amount to furnish instruction to nine scholars in one school, is does to forty in another.

order is Heaven's first law, so should its importance be estimated a school-room. And the teacher who maintains it with the est aggregate of corporal infliction, is usually the most success. The phrase, "Take off your coat, sir," with its usual accompaniso often repeated in the school-room during the early part of the alf century, is now nearly obsolete; most teachers find other means uring better results, which are, in general, by appealing to the feelings, rather than to a dread of physical suffering. Kind have a wondrous power. "A soft answer turneth away wrath, rievous words stir up anger." Scolding and fretting only make

bad scholars worse, and good ones indifferent. Teachers let their scholars know they have it in their power to vex School Committee.—C. C. THOMPSON, M. J. SMITH, CHARLES WRIGHT

# NORTHAMPTON.

Evening Schools.-The records of the Evening Schools. favorable condition for them. The average attendance with the average number belonging, is better than is oft this class of schools. The excess of the whole number over the average number belonging, is explained from th many to the day schools, and the fact that many attend Schools only at the intervals between jobs of work which be able to obtain. Many, however, are made irregular in by indisposition after a full day's work in some mechan ment, or by the allurements of good skating, or more f the exhibition of some travelling entertainment. The sometimes leaves but a handful of pupils for the Ever while the travelling juggler, or band of minstrels, or dan victory. I rely upon the influence of the people, righ public sentiment, to correct this tendency of the young t demands of the schools in favor of shows and amusem worth. Parents should see that the schools hold their strict attention and attendance. I have uniformly denied of giving notices in our schools to any of the travelling whose flaming handbills and evening shows tend to distra tion of the pupils from their work.

Many pupils in our Evening Schools the past year, have the first time to read, write and cipher. Quite a proport has been made up of those citizens, who conversant with language, have come from the continued labors of the daread, write and speak the English language. They have a faithful, well-behaved class of pupils. I invite the pethese Evening Schools. Much encouragement and goot therefrom.

Drawing.—Instruction in drawing was made perempter schools, by an Act of the last legislature. For the spaterms, a special teacher, C. C. Burleigh, Jr., was employed our schools with a fair degree of success as developed in term. In the remaining schools, commencing with the and in all the schools in the winter term, instruction in devolved upon the regular teachers. Bartholomew's Guides," a book of instructions, was given to each teachers.

ructions were also given in this department in teachers' meetings. In some, lack of ability or confidence, or an indisposition on the part of the teachers, has caused a great neglect of duty; yet as a hole, the study of drawing has been a success. Its results are seen improved writing, map-drawing and work of pupils on the slate, pard and paper. More correct habits of observation are found, the judgment of pupils has been favorably called into action and displined. The eye and hand of each pupil have been trained; a correct lea of form and symmetry called out. Still greater improvement all these points will be gained the coming year if the superintendant and teachers perform their duty.

Superintendent of Schools .-- L. F. WARD.

# SOUTH HADLEY.

The prosperity of the school is seriously interfered with by those arents or guardians who, for the sake of a few dollars, keep their hildren out of school from time to time to do a little work. This a great evil and your committee are confident that those who have nese children in charge would so regard it, did they but give the abject a little consideration. This irregularity of attendance is inrious to the school no less than the scholar. Teachers well know hat a check is thereby given to the enthusiasm of their pupils, for nis action of parents confirms their children in the opinion to which ne youthful mind is only too readily inclined—that attending school , after all, a matter of small importance. Thus it happens that, then a father says to his son, "You must make good use of your me at school, for learning will be worth a great deal to you when ou grow to be a man," and shortly afterwards tells him that he must tay at home the next day, or for a week, perhaps, to help strip obacco or to saw wood, the boy is not slow to perceive that his father oes not really mean what he said about the importance of attending chool, and will take example most probably from his practice rather han his precept. So important is this matter of punctual and reguar attendance that the marks of absence or tardiness in the columns f the register afford a sure means of judging the prosperity of the chool.

In a communication to the committee at the close of the winter, by he principal of the High School, he treats of one subject which can best be stated in his own words: "I would like to speak here of an objection which I have heard raised by several parties, viz.: that our course s too severe, and that we are attempting to force our pupils into too

rapid progress. Speaking not only for myself but for every in your employ, I can say that nothing is further from our in I ask all who hold such ideas to examine our course of study of and shall be glad to have it amended if it, or any part of: severe. I can but think that the cause of such complaint lie other quarter and has its origin in an evil much too com much to be deprecated. I refer to irregular attendance. T parents do not appreciate the ill results of a laxity in this Absence from a single recitation may cause the pupil to along under the disadvantage for weeks. A bright, intelligen boy commences a term full of enthusiasm for study; everyth on nicely—lessons are easily committed, till in an unfortun comes a temptation for an absence; a visitor arrives, perha ride is proposed, and the child, with only a child's wisdom, an absence. It is thoughtlessly granted, and a day or two enjoyment. The pupil comes back to find his class advanced plying principles he has not mastered, and even with all exe the parts of teacher and pupil, double labor is required to the loss, even if it can be done; the child gets tired and disc the lessons seem hard, the zest is all gone. Complaints ar and the course of study or the teacher is blamed for what w the parent's fault. I have even known parents take healthy from school for a week to 'rest them,' not knowing how mu work and discouragement they were entailing upon them mistaken kindness; for, of course, the progress of a class mus stayed for an individual member; and I have never found at all willing to have their children submit to the other alter that of placing in a lower grade. It has been quite a preva tom for parents to allow their boys to absent themselves 'strawberry time' for the purpose of earning a few dollars. of cases where this absence has taken a year from the progres pupil, and many where a course of dragging has been cause better. Is this true economy? The system, too, of inte attendance, even allowed by those whose means are ample, vailed; many of our seats being filled in winter by boys wh work during the summer. With some this is, no doubt, a m necessity and regret, but in many cases it is not a necessity. course would be considered folly in learning a trade or pursu business. Is it not greater folly in this case? I am glad to some are becoming conscious of this and trust it will soon, custom of 'boarding round,' be among the things that were."

School Committee .- R. O. DWIGHT, B. C. BRAINARD, N. PRESTON.

# SOUTHAMPTON.

Then how many good things have been said about visiting schools, and taking an interest in the studies of our children. What light leams in the eye of a little boy on seeing his mother enter the schooloom, and how strong is his determination to have a good lesson that ternoon! What sunshine does her presence shed over happy faces, and what a life is given to every exercise! How loud the boys spell, and what perfect lessons in geography!

Mothers, it pays well to spend an afternoon in the school-room. In the much you can aid in preparing the recitations of your children. Lessons that have been once recited at home, will pass off cell at school, and they will be remembered. The ground can be cell prepared by the parent, and the teacher will have nothing to do

ut to cast in the seed.

And the community at large has much responsibility in regard to ducation. Every one that can speak, or act, helps to give tone to ablic sentiment, and that in our country is the power behind the arone. Let the value of a good education, and the dangers to our see institutions from ignorance be the theme of frequent discussion a neighborhood, and soon there will be such a pressure, that avacious parents will be ashamed to keep their children out of school r the sake of their small earnings; and children will feel that going school is no mere pastime, but serious, earnest work.

School Committee.-Rupus P. Welle, Asa Niles, Isaac Parsons.

# MIDDLESEX COUNTY.

### ASHLAND.

A lack of interest in the schools leads to many misunderstandings home, and to trouble at school. If parents care so little about the lucation of the children that they rarely visit the schools, the holars may be pardoned if they think that study is not the most portant thing in the world. Examination day comes, but the parents are absent then. One school of over fifty scholars had but six sitors present on examination day, and some other schools were out as well, or poorly, cared for. This feeling in the parents will jure a teacher's usefulness. How can a proper degree of discipline

be maintained, when the parents say in the presence of the "I would like to see the teacher who would dare lay a fi children." Suppose the teacher lays down a penalty the how much weight does it have with the child who says "If I am punished the teacher will catch it, for father or so last night." Again, the parents, by a proper show might make the labors of any new teacher much lighter; in prevent a resignation. It is not enough to reply, "No stay with success if he has not the confidence of the scho admit that willingly, but the confidence of the scholars m wanting if the parents did their duty. When a child com the close of the first day or week, saying, "I don't like th instead of correcting the feeling and advising delay in ma opinion, the parent without investigation sides with the c the discontent, and then points to the lack of interest t have in the school as a proof of the incompetency of If instead of doing this, or taking the children out of a would keep them there until prejudice had subsided, the was fault in the teacher, it would be clearly manifest.

Superintending Committee.—George T. Higley, Marshall M. Cutte Marsfield.

### BELMONT.

Our dull scholars are the plants which we wish most c tivated. Unless they are watched and encouraged they dull at the end of the year as at the beginning. We hardy plant will mature even if neglected, while a tend die. Whether it is best to place the dull scholars by the what position they shall occupy in the school so as best to without hindrance to the more gifted, we are not prepare We leave this to the teacher, under the advice of the su of each district, but these scholars must not be neglected aged.

The interests of our schools will be promoted by the a of an educated, honest and efficient superintendent of a Arlington and Watertown may be willing to join in the one, we ask the town to give the committee the author the appointment. We recommend that a law be passed lature compelling the school committees of several adjoiniment in convention and there choose a superintendent of of said towns. A sufficient salary can then be paid to

ervices of an able and efficient man; this to apply only to those owns throughout the State where there is not a superintendent.

School Committee.—J. W. Turner, Warren Frost, M. W. Marsh, Henry Richards, Horace Bird, Geo. W. Ware, Jr.

# BILLERICA.

The improvement in the manners of the pupils, both in and around he school-room, is deserving of special mention. While there is still much to be done in this direction, there is evidently, less of coarseless and roughness to complain of than formerly, and a higher standard of refinement.

This is a part of the school education to which the committee have attached much importance in the employing of teachers, and one they would commend to the attention of all parents and care-takers of children. What is procured in the school from the lessons, while it is the most prominent consideration, is not by any means the only one. The acquiring of the habit of obedience, and of deference to others, must have assigned to it an important place. A school or a teacher acking in this respect is fundamentally wanting, and there is nothing which concerns the welfare of the schools, in which parents could ender aid more directly than in this. There is no cause which cannot be removed, why the reproach of a low standard of refinement hould attach to public country schools, and the belief that something has been and is being done in our town to remove this reproach, is cause of congratulation.

More strictly than under the old district system, the school is the are of the whole community, through those who are regularly chosen o have oversight of it. Glad of suggestions these ever are, if rightly illing their place, and ready to consider any requests, but to them belongs the final settlement of all questions touching the fitness or therwise of teachers, the course of study to be pursued, the discipline of the school, and whatever else concerns it. Interest, sympathy and cooperation on the part of the friends of the pupils are exceedngly desirable and beneficial; but when these are suffered to degenrate into interference and a jealous feeling of individual rights, it pecomes one of the most formidable evils with which the teacher of country school has to contend. Where, as is the case in the country more than in cities and large towns, the teacher is intimately known, and in turn knows the parents, their habits and peculiarities, ner situation is one of great difficulty, and demands a large exercise of consideration and charity. The less the interests of separate famiies, or the opinions or preferences of individuals are either brought

to the teacher's notice, or regarded by her, the better. E the motive is purely to help the teacher, and the way clearly to do it—except for this, the wisest course is to le and to regard her as amenable to the committee alone. all each individual could wish, and does not do exactly b as they desire or deem best, she may yet be doing a g work for the school, and may be improving with regard to deficiency, as by some it is deemed.

School Committee.—C. C. Hussey, Chairman; G. P. Elliott, C. Flet.

### BOXBOROUGH.

Every one acknowledges the necessity of good government school; the only question is how to accomplish it. Som it can be done by what they call kindness. We think it that some children will not learn unless controlled. The subjection to authority; must submit or be willing to superior will. We do not doubt that most children at school may be controlled by kindness; but we think it g lay down the rule that force must never be used. The kindness the teacher can do an indolent, idle, wilful, vici bedient scholar, is to bring him by force into subjection, i cannot otherwise be secured. If corporal punishment necessary to secure this end, then why should it not be u ishment should never be inflicted merely to secure or teacher's authority, but because the teacher's authority is the highest and most rapid advancement of the scholar which he is sent to school.

The parent must remember that in the school-room the full authority, and the parent must not blame the teacher, order and good discipline, the teacher resorts to the same the parent uses at home or ought to use. We say ought cause it must not be forgotten that the lack of order an at home makes the duties of the teacher in the school-burdensome and difficult. The teacher ought to be actu same motives, and the same spirit of forbearance, love at that would influence the kind but conscientious parent at

Superintendent .- OLIVER WETHERBEE.

#### CAMBRIDGE.

The Training School.—This school has been in oper one year, and may now be said to have passed through 872.7

ental stage and settled down to its recognized work as an established art of our educational system.

It was opened in February, 1870, with a very large class of young dies, and was entrusted to a committee of one from each ward in ne city, on a plan whose general outlines only were fixed, and the etails of which it was presumed the large and extraordinary commite in charge of the enterprise were empowered to settle as it became ear what was required.

The original plan contemplated the appointment of a principal and ssistant; and it was believed that the young ladies of the Training lass would themselves be able to conduct the instruction of the rimary classes in the building, under the general direction of Miss Iunroe; while the principal, Mrs. Sullivan, was to be occupied mainly ith the young ladies of the class in training. It was supposed at his time that the benefits to be derived from the school would be onfined in the main to the Training Class, and that they would eceive them from the three sources, of practice in the Primary rooms, estruction in theory and practice by the principal, and from occaonal substitution in other schools.

The principal and her assistant, although from the first they doubted ne wisdom of some parts of this plan, devoted themselves generously nd earnestly to it, and labored with all their might to make the speriment a success. It was found, however, after several months trial, that the plan was defective. The primary classes could not managed by the young ladies as was attempted. The scholars nderstood very quickly the difference between them and permanent achers, and could not be made to respect their authority. And the equent changes required, to give every one her due proportion of ractice in teaching, seemed to doom the classes to be instructed by achers in the first and most inexperienced stage. As soon as they equired a little experience and control of the room, and gave promise doing well, the turn of another would begin, and the round of experience would have to be repeated.

In addition to the injustice which was thus done to the class, the emmittee found by careful observation that the young ladies themlves did not improve under this method as they should. It was and that they needed constant supervision. They had no models instruction before them,—no standards and no ideas,—and required their practice the continual presence of a competent person to rect them and to form their ideas and habits by her own example. These results were duly communicated to the board; and at the pening of the present school-year, in September, the committee were ple to take a first, and as it has proved a sufficient step toward the

correction of these evils by appointing two additional P. ers,—one for each vacant room.

There has been no trouble since. The appointment of ers had the further advantage of enabling the committee the board to discontinue the one daily session in the Prof this school, which had been necessary at first, and them in agreement with the hours of the other Primarie

As the school is now conducted, the young ladies of Class have the advantage of as much actual practice i room as they require; but it is always practice under competent and paid teacher in charge of the room, wh they are for the time being. In this way the discipline perfectly maintained. The young ladies have the mod before them, and are not allowed to drill themselves into

The principle on which the practice of the Training conducted may therefore be said to be that of practice u and competent supervision.

The class are not, however, occupied wholly in such observation in the school-room. They receive daily less and practice from the principal. They are carefully institudess which apply to the management of classes and of They are taught how to observe and how to teach.

Their hours of attendance are wholly in the morning to 2 P. M., and in the afternoon the Primary classes a undisturbed care of the regular teachers.

The instructions given by Mrs. Sullivan are not of the advanced education, but are designed to give a special qualified teaching in the Primary Schools. They form a basis of for Grammar-School instruction. But the school is not to train a class for Grammar-School instruction, and it designed to qualify for teaching in the Primaries. The given to the class cover the ground of theory and protake up great numbers of examples and illustrations, and work actually done; and they are in addition an attemporal class to those habits of mind which are so important in and to give them, from the study of text-books and a elementary lectures, a kind of knowledge which is reschool-room.

It was supposed at the opening of the school that auxiliary of the training work would be substitution in t maries of the city. The numbers in attendance were niently large, and no harm resulted from the plan.

The school has now, we suppose, settled down to about its normal mbership; and the committee find that it is possible there may be much rather than too little substitution. It is evident that this ctice, if carried too far, would disorganize the class and defeat the is of the school. The success of the plan requires that the young ies should remain substantially undisturbed in their work throughthe year. They should be expected to begin the year with the cool and remain to the end, and they should not be permitted to as substitutes indiscriminately, or whenever an opportunity offers, only under regulation, and as their own progress in the Training tool and the interest of the school require.

The Benefit to be Expected from the Training School, and the use ich should be made of it.—This school, to be as useful as it is hoped it it will be, should not be left merely to train and graduate its and class. It should be in a sense the Normal School of the city, model and the instructor especially of all the Primary teachers.

t will send forth annually a trained class into our schools, and ough them affect very much the whole system of public education. It it is designed to do much more than this, and be an important sefit to every instructor in the city. The statute of the Commonsalth requires the teachers to visit other schools. This school is vided as one above all others to be visited. Arrangements are de for such visitation, and it is expected that other teachers I see here examples of what they can do, and models of the y to do it. For the sake of preventing this school from running much to theory, and losing its practical value and character, as been kept as it was at first,—no more select than the average. It is children come mainly from families which are in no respect to the examples of the children come mainly from families which are in no respect to an average condition in life, and what is accomplished with mean certainly be accomplished in any school in the city by any other who knows how to do it.

Carticularly at the present time, when efforts are making to introe a freer and more various system of instruction into the Primaries,
s the value of such a training become conspicuous. In all plans
school improvement we come back at last upon the character and
lity of the teachers; and any one who has taken the pains to
mine the course of study adopted during the year past, will obre at once how much more is left to the teachers than formerly.
believe that to be the true system which leaves the most to them,
ch is consistent with order, and holds them to the widest and
est responsibility for results. Every step of approach to such a
mem is new evidence of the importance in the system of such an
itution as our Training School.

For the information of the public we would say that the is not designed to be a select school for any who wis their education, or to qualify themselves for the general ving. It is a training department provided by the city for It is understood that those who derive benefit from it are by instructing in our schools; and it is not considered to mittee are under obligations to receive pupils into it number nor at any other times than is likely, in their promote the objects for which the school was established

The Drawing School.—At the last session of the legis was passed requiring every city having more than ten th itants to make provision for giving free instruction in mechanical drawing to persons over fifteen years of age, or evening schools, under the direction of the school co compliance with this Act, the city government early procured a room in Hyde's block, in the second ward, was at once opened by the committee. Professor Chastructor at the Institute of Technology and a practical a placed in charge of the school; and in December, Mr engaged as his assistant. Ninety persons appeared at the opening of the school; and during the two months of one hundred and forty—among them carpenters, machinglass-cutters, stereotypers and cabinet-makers—have a selves of its privileges.

The average number of scholars has been one hundred and the average attendance about seventy-five per cent has been divided into two classes, each class meeting t Models, charts, and designs for copying have been furn teachers. Drawing boards and instruments have been the committee at a cost of about three hundred and fifty further outlay for this purpose will be required for severa the school is considerably enlarged. Instruction has I architectural, machine, and ornamental or free-hand dr half the pupils study architectural drawing, one-fourth n ing and one-fourth ornamental drawing or designing. school was at the outset an experiment, and from its unl suffered for a time from lack of an assistant instructor room, lights and instruments, the progress already made the committee in the belief that the school will prove on useful as well as popular features of our Common-School

It is an attempt to provide some intelligent prepar prosecution of industrial labor, to teach mechanics and a has been termed the "alphabet" of their education, to paring to work at the carpenter's bench and the machinist's lathe illities for study corresponding in some degree to the courses in ok-keeping and the modern languages, and in the classics and mathatics, by which their fellows are now trained for the counting-room I the college. The welfare of the State is as dependent on the rking men as upon professional men. The skilled mechanic fills not a place than the educated merchant. Nor can taxation for the ining of the one class be supported upon any principles that will apply to both. The limits of this report will not allow us to touch on the many advantages to be derived from the system thus inautated by our legislature; but we fully believe with one of the earliest advocates that "whatever brings manual skill again into repute, I counteracts the growing disposition to discredit every means of clihood that does not consist in 'brain-work' merely, is a rositive in to our civilization."

School Committee.—Hamlin R. Harding, Chairman ex officio; Andrey P. Peabody, xander McKenzie, Henry P. Walcott, Kinsley Twining, Jamp Cox, Edward ogswell, Charles J. McIntire, George H. Miner, Sumner R Mason, James M. esher, William A. Munroe, Francis A. Foxcroft, Philip P Ammidon.

Training School.—Less than one year has elarsed since the organion of the Training School; so that, had it been in any true sense experiment, it would now be too soon to speak of results with any ree of positiveness. Still I desire to express, most unequivocally, opinion that a full acquaintance with the actual work of the school is far, and a comprehension of the fundamental ideas governing it, ald remove the doubts that any one may have entertained at the set regarding the expediency of establishing such a school in this

certainly the success of me school up to the present time has been be marked than we had any right to expect. The teachers have wed themselves more admirably qualified for their work, and have en efficiency to every department of the school. Fears have sometes been expressed lest the children in this school should suffer on the multiplicity of instructors. Experience, which is as so much better than mere theory, has already proved such as to be roundless. The Primary classes are in every respect in the excellent condition, and are doing thorough and successful work. It is to be roundless of the best teachers of other Primary Schools arms my own opinion that at least some of the classes of the Primary department of the Training School are already furnishing examons such excellence in Primary-School instruction as to make this ol, as was intended, a model Primary School.

The Training School is doing just the work that was it. Of the young ladies who have thus far been method, some have been convinced, as they could have be way, that they had not the requisite qualities for the tion, and hence have ceased to be applicants for poschools; while others have shown an aptness to teach, a preparing themselves for the special work for which the themselves fitted.

I find that thirteen who have been members of the T now have permanent positions in the city; and that t dents of Cambridge, who were members of the last claton Training School, have received appointments,—sixteen recently elected who had received the bentraining. Some of these young ladies are occupying positions, but so far as I am aware, the success of all factory.

I believe nost sincerely that the Training School itself to the judgment and sympathies of all who macquainted with the work it is doing and the place it oschool system.

Evening Schools.—The small expense involved in ca schools is of little consequence, when compared with resulting to the community from the diffusion of inte the ignorant, who are here, aselsewhere, a source of st ness socially and politically. Dubtless the statutes of wealth will soon recognize Evening Schools as a par system of the State; but I cannot fohear expressing t legislation will not then be complete unil the law lays firmly upon the children of the citizens, and declares the and safety of the State demand that they shall be must have in this country a system of complicary e that shall be such in reality as well as in name. Tgnor correct principle, we have seen, within the last bir wiser nations leaving us far behind. By practical, parent to educate his child or not, as he chooses, we rance increase in all parts of the country with a ra well alarm us. Notice a few facts furnished in the the commissioner of education. In 1840 there were States 549,850 white persons over twenty years of ago and write. In 1850 this number had increased to 1860 it had become 1,126,575. Adding to this last nu adult colored persons also illiterate, and we have the gate of 2,872,111, or nearly three millions wholly una ite. From facts given in this report, it seems evident that the turns for 1870 will show that this evil is still increasing with startg rapidity. What are the facts relating to this State,—a State
hich boasts so much of its system of Common Schools? In 1840
e number of white persons unable to read and write was 4,448. In
50 it had become 27,539; and in 1860 it had reached the large
mber of 46,262. Doubtless the number is now very much larger,
d is increasing so rapidly in proportion to the increase of population
to show a much larger per cent. of illiterate persons than at any
evious time.

I mention these facts because they seem to me important, and beuse I believe we are all called upon to use whatever influence we we in securing legislation sufficiently stringent to teach parents that e State has rights which they are bound to respect.

Vocal Music.—Some important changes have recently been made the department of music in the Primary Schools. Until within a w months, the singing-master was expected to visit the different assess once each week, and personally to give the entire instruction quired by the regulations. With the rapid increase in the number school-rooms, it was found impossible for such a system to continue. October last, Mr. Lincoln, instructor in this department, addressed letter to the committee on music, setting forth the difficulties under nich he was laboring, and suggesting as a remedy, a plan which was terwards adopted by your board. This plan is best described in the ster to which I have alluded, and from which I venture to quote a w paragraphs.

"The musical instruction is to be given by the regular teachers, ch in her own room; and this to be under the superintendence of e singing master. This is the system which has been followed for veral years in the Boston schools; is going into operation this very onth in Philadelphia; has been adopted in the Salem schools for the st year; and is the system which will prevail, I think, wherever usic is taught in Primary Schools. I have already taken steps in at direction. With the consent of the music committee of 1868, requested the teachers in the Primary Schools to allow the children study, during the week, certain exercises which I left on the board. was entirely voluntary on their part, and I was delighted to see hat progress was made. To be sure some teachers did little or nothg; but very many of them never failed to show me their classes, om week to week, perfect in the task assigned. I found—what I d been prepared for by observation among the Boston schools—that ose of the teachers whose classes showed most progress in my partment were not, by any means, proficient in music; some did

not even sing at all. If you ask me then how they mana swer, by their wits,—by their native tact or acquired skill at I venture to say that there are from thirty to thirty-five of ers who are able to-day to give the musical instruction to classes in a very respectable manner. Indeed there will be every building, from one to five who can do this."

The plan, then, briefly stated, is for the regular teacher, direction of the singing-master, to give instruction in mother branches. It is now too soon to speak of results; only say that, so far as I am aware, the teachers are earnest oring to make the plan a success.

As there are doubtless some who still believe that none who are skilled in music can teach successfully, I desire to the Boston school report a paragraph relating to the inst music in the lower grades of the Grammar department:—

"According to the report of Mr. Holt, only seven out of hundred and fifty-one teachers who have come under his of have proved themselves unable to do their work satisfactor these seven,' says Mr. Holt, 'three exchange work with other at the time of the music-lesson; one employs a teacher from to aid her in this part of her work, who is present at the time visit to receive my instructions; while in three rooms the imperfectly done. I find that teachers who are regarded as in other branches obtain the best results in music. And may best teachers are among those who had no idea that they anything in music when we commenced."

Such statements ought to give us courage as we enter up system of instruction in this important branch of study. as I do that the measure of success in this, as in other depa the school-work, is largely dependent upon the tact, the per and the fidelity of the teacher, I certainly cannot doubt results hereafter will be highly satisfactory.

Drawing.—The progress in drawing during the year has satisfactory as could reasonably be expected. The full resuspected will not become evident until the pupils of the low shall have advanced by successive steps through the entiand shall thus have shown the degree of proficiency whi attained by accomplishing the entire work prescribed by tions.

I submit, as a matter worthy of consideration, whether now expedient to appoint a teacher whose duty shall be to to of the drawing in the various schools of the city. If the rig can be secured to superintend the work in this department n doubt that the results will be much more satisfactory than can be saible under the present system. I do not suggest that the regular achers be relieved from the instruction of their classes; but I beve that in order to give unity and efficiency to the teaching in this bject, a special instructor is not less needed than in the department music.

We have complied with the requirements of the law passed by the rislature of 1870, making it the duty of every city and town have more than ten thousand inhabitants to give free instruction in dustrial or mechanical drawing.

An Evening School, organized in the month of November to meet s requirement, has been from the first highly successful.

All the important facts relating to this school are before you in the nual report, and need not be repeated here.

Without attempting to discuss the wisdom of engrafting upon our nool system this new feature prescribed by the law to which I have uded, I can only say that it seems to me to be a step in the right rection. We can, even in Massachusetts, learn two things from the day of the Common-School systems of the more advanced nations Europe. One is the necessity of a system of compulsory educan, and the imminent danger to the State from any system which mes short of this; the other is the importance of technical or industal schools.

These two features united have done so much to prepare Prussia those marvellous achievements which have recently astonished the ilized world, that one of the greatest of English statesmen has clared that "the victory of Germany over France is the victory of e Common-School system of Prussia over the ignorance of the ench Empire."

There are in Prussia 361 schools devoted to architecture, mining, riculture, forestry, navigation, commerce, and other technical studies, neral and special. Besides schools for weaving and the textile nufactures, there are 265 industrial schools whose studies and hours a directly arranged for the use of mechanics. The provincial and unicipal improvement schools, and those for foreman, workman and prentice, all are fitted with models, tools and laboratories. There also many drawing schools, in which the classes are arranged to to various trades needing such instruction. In the weaving schools appuls receive practical instruction, and also study chemistry as blied to the textile arts," &c.

But Prussia, far from being alone in the matter of industrial educan, is even surpassed by some of the neighboring nations. Wuraburg, said to possess the best educated population in Europe, having only 1,700,000 inhabitants, has 130 industrial school ous kinds, in which there are more than 20,000 pupils.

England, too, is driven to the necessity of establishing a education somewhat similar to that of which I have spoken, to maintain her supremacy as a manufacturing and commerce From 1860 to 1868 the number of industrial schools in Green had increased from 9 to 300; while the number of pupils had from 500 in the former year to 15,010 in the latter. I have sented these few facts,—gathered mainly from the report of missioner of education,—not for the purpose of discussing the of industrial education among us, but because they seemed be of interest, and worthy of consideration.

Superintendent of Public Schools .- E. B. HALE.

## CHARLESTOWN.

Drawing Schools.—In compliance with a law of the Sta at the session of the legislature of 1870, a school for inst mechanical, or industrial drawing has been established, a direction of the committee on Evening Schools. A meeti ganization was held on Friday evening, December 16, at School-house, at which 117 pupils above the age of fifteen sented themselves for admission; and it was found necessary them into two classes, each of which meets two evenings the High School-house. The present number of pupils is having been accessions each evening that the school has be sion. The committee have engaged the services of Mr. Lu who comes highly recommended for his accomplishments as of drawing. It may perhaps be necessary to establish a t and it will undoubtedly become needful to engage an assist branch, as it is found that considerable individual instructio sary for progress.

The experience of other cities, as well as the limited expension this city, leads the board to believe that this class of school decided want which has existed in our Commonwealth, a productive of the best results in all respects, though the law the establishment of such schools, no doubt, contemplates rian rather than its æsthetic value.

Corporal Punishment.—The committee understand corpo ment to mean "all inflictions of bodily pain." But if th reports can be relied on, either the term is understood diff some of the teachers, or else there has been no other form ment administered in our schools but the use of the rod, ears no record of pinching, shaking, slapping, &c. Perhaps, howe, some of these modes, such as slapping on the head, might be more repriately termed capital punishment. But in whatever sense the a may be understood, it remains as the settled opinion of the complete that all inflictions of bodily pain should be avoided when content with good order and discipline. By good order and discipline committee would not be understood as at all approving of that cise and tedious strictness which is so detrimental to the proper tion between master and pupil, as also to the healthy and hearty gress of the school in its studies. It is absurd to require perfect formity in a class, thus destroying all of the native imagination force of the individual scholar. All restraint not absolutely dful, either to the mind or the body, should be avoided.

While the committee would hesitate long before expressing the nion that corporal punishment should be entirely abolished, they leve its abuse to be far more detrimental than would be its abolia; and unless its administration be restricted to extreme cases of abordination, public opinion will demand its prohibition by law.

But there are other forms of punishment as objectionable as that bodily pain. The Scriptures tell us that a tongue can scourge. caunting or sneering word may sting more than the tingling rattan, a teacher that is continually finding fault will soon cause discourment and derangement of a class of scholars, who, under judicious atment, might be zealous and studious.

The committee are aware that much might be said in excuse for a cher in contracting the habit of fretting, for it is frequently an conscious habit; they fully realize the strain to which a teacher's ience is often subjected; but they nevertheless desire to call the ention of teachers to the subject, with the hope that the habit may broken up, if formed, or guarded against if not already contracted. While speaking thus plainly and earnestly to teachers, it is but just say that, in some cases at least, parents are equally responsible for excessive use of the rod in our schools.

It will be seen that the committee wish to restrict its use to extreme es of insubordination, and every one conversant with our schools ows that those cases rarely occur when the home influence is what should be.

A petulant or thoughtless word reflecting upon the teacher in the sence of a child, is often the cause of such insubordination, and ders the punishment necessary. If the pupil feels that the teacher the confidence of his parents, he is not apt to place himself in an atude of insubordination.

In behalf of the Board.—WM. H. FINNEY, GEO. W. GARDNER, ABRAM E. CUTTER.

There is a question among teachers of the extent to value spelling-book should be used, and the class of words white occupy the chief attention of the pupil.

My own opinion is, that while a spelling-book with we classified may assist pupils in recognizing the general printeredy alluded to, a large part of the practice in spelling upon words which the pupils are in the habit of using in contor meeting with in their reading.

The orthography of words of whose meaning and use the conception, will hardly be retained for a long time, but may acquired when such words become a part of their vocabular

Reading.—Reading stands next in the course,—an art in it ciently wonderful, if its commonness had not made us insits value.

But reading gives us a more or less perfect transcript of the mind, according to the degree of perfection to which the art

A merely tolerable reader will obtain the main ideas of especially where the understanding alone is addressed. It that constitutes our best literature,—in poetry, and in the specimens of prose,—it is only a cultivated ear and a we voice that can bring out the æsthetic element, the sentifeeling, and at the same time intimate the mental moo writer or speaker. In proof of this, I might confidently appone who has heard familiar pieces read by experts in such as to invest them with beauties, which, with their own read had never discovered. We pay the price of an ordinary hear a good elocutionist read a few selections from Hood and Shakspeare, when we have the books containing those unread upon the shelves of our own library; or, if not us read with greater interest after paying a good reader for into them a living soul.

It has seemed to me that we fail, in our schools, to make cise what it might be made.

Of all the branches taught in our Grammar Schools, this at the greatest number of faculties.

Apart, then, from its own value as an art, it is, perhaps, educational value than any other school exercise. It calls, taught, more faculties into play than any other. Nothin perfect understanding of the author's meaning can secure cophasis, force, rate and inflection. The sentiment, if apprecimanifest itself in the quality and modulations of the voice.

As a means of general culture, it has no rival. It open pupils the richest treasures of thought and sentiment on all e subjects. A teacher who has command of a good elocution, can e, by reading, a more subtle analysis of a choice specimen of prose, a beautiful poem, than can be imparted in any other way.

But, to make the reading exercise what is here claimed for it, every cher should not only be a good reader, but should understand the neiples of elocution. It may not be necessary to teach those princes abstractly, or to say anything of the technical terms employed the art; but the teacher should be so possessed with those princise that they will be unconsciously recognized by him in all his ching; and he should be able at all times to give a reason for the phasis, quality of tone, the rate, pitch, &c., with which he reads assage. No one would be considered qualified to teach music bese he sang or played well by rote, if he knew nothing of the scient of music; nor should one undertake to teach reading without king himself acquainted with the principles of elocution.

Much of the early instruction in this branch is necessarily mechanand imitative. The ear must be cultivated to an appreciation of the elements of expression, and the voice to their utterance.

When this is done, by systematic practice in articulation, inflection, ass, &c., in the lower classes, it is not too much to expect that, in higher classes, the reading exercise may be made to convey much ormation on important subjects, to create and strengthen a literary te,—in short, to become an efficient means of general culture.

Grammar.—Grammar, too, is found among the recognized studies all our New England schools, and has even given the name to what

erhaps considered the most important grade of schools.

And yet it may be doubted whether, as generally taught, it is of ch practical value. If it is merely a critical art, designed to enaone to detect errors in what somebody else has written, perhaps common mode of teaching it is as good as any. But if, as the oks say, it is "the art of speaking and writing correctly," then, amitting the text-book to memory, and learning to analyze and se, and correct false syntax, do not teach the art.

n teaching any art, three things are required,—a knowledge of neiples, an examination of models, and systematic and abundant ctice. A text-book, in the hands of a judicious teacher, may assist

eaching a knowledge of principles.

Analysis and parsing, or the examination of models, will show the dication of these principles; but systematic and abundant practalone will secure the power of "speaking and writing correctly." e great error that we have committed in teaching grammar is, unvaluing, or wholly omitting, practice in writing.

What proportion of the time now allotted to gram schools is spent in composition? I think at least ha might be devoted to it without detriment to the exercise and parsing. How does the carpenter learn his trade? by studying the working plan of the architect, and comemory the names of the several parts, and the manner in are put together. He must do what he wishes to learn, know of the doctrine," says the great Teacher, "if ye do, is true in all things. We learn to read by reading; to sing; to paint by using the brush. We learn a trade by it; of course under proper guidance, and subject to crit what is done poorly at first, may be improved upon. Ye the folly of the man who resolved never to go into the had learned to swim. Let us beware lest

"Like that strange missile that the Australian throws, Our verbal boomerang slaps us on the nose."

Drawing.—Drawing has pushed its way into the course studies.

The instincts of childhood, which could not be whipp pelling the pupil to make pictures on his slate, came gra "endured," perhaps not without a touch of pity, and is braced." Is this the insidious approach of vice, or is it proof that the instincts of childhood may be wiser than judgment of manhood?

Is it not possible that some other restless activity of your subjects the offender to punishment, may hereafter be in the same category? "Take heed that ye offend these little ones."

Superintendent of Public Schools .- B. F. TWEED.

### CONCORD.

Until recently, the words, "make a detailed report of the several Public Schools," have been natural interpreted to prescribe that the annual report should caccount of the virtues, and the short-comings too, of eact teacher, in each and every term of the year, and in rebranches of study and discipline. As a result, if a youn from college, perhaps, with no experience whatever in teams he naturally might do, to secure the best order, that faput in print before the eyes of all tax-payers at the Man If a young lady equally inexperienced, did not prove to

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ft for imparting knowledge, or was unable to maintain as thorough scipline as is desirable, and as it is proper to require, then she must ok forward with dread and shame to the time when she should be at in the pillory of an annual report. The prospect of being called be not to make such a report was alone enough to keep a humane man at of the school committee. And the shifts to which humane men are been reduced, that they might say a thing and yet not say it, at they might tell the whole truth and hint at all deficiencies, and ill to do it so as not to hurt the feelings of worthy people, whose ally fault was that Providence did not call them to adorn the vocation of teaching, would be ludicrous if they were not so sober.

But latterly a wiser interpretation has begun to prevail. It has ome to be seen,—and wonderful it is that it was not seen before, nat if a teacher is good enough to keep, it is simply absurd to tell l his or her smaller errors and imperfections to a whole town; and nat if you dismiss teachers, that it is useless cruelty to make public or no good purpose all their mistakes. What the committee are detail are such facts, hints, suggestions and needs as shall in their pinion promote the best interests of the schools:-by awakening ore popular enthasiasm, by calling the attention of parents to their wn duty, by defining the proper work and office of the school and eacher, by presenting to the town the pressing wants of the schools. Your committee have dwelt at such length on this point, because ome remarks have been made concerning the omission in the reports f the last year or two of personal details. That omission was of et purpose. And your committee hope that in the future no personal lusions will be made, unless indeed at the close of a long term of ervice it be thought fitting to render proper acknowledgment for real nd distinguished success.

The school-houses of Concord are all in a comparative sense new mildings; that is, they have all been built within less than twenty ears. Without being in any sense elegant structures, built without egard to cost, they are on the whole well adapted to their purpose. Teat and unpretending in their exterior, with good yards for play-rounds, light and roomy in the interior, they are as good buildings as to could expect to get. There is, in fine, no marked objection to their riginal plan and construction. But your committee would respectfully suggest that there is a very great difficulty in respect to the care and repair of school buildings. The trouble is this: the persons who y position ought to know about the condition of these buildings, and who in fact do know, the school committee, have no charge whatever of them. While the body which is overburdened with the care of the general interests of the town, its roads, its bridges, its engines,

its finances, and which rarely enters our schools, has en buildings and repairs. Except by the courtesy of the s school committee cannot have a square of glass set, a a blind-fast replaced, or a door-lock repaired, or a stove do not speak in the way of complaint of the selectmen. farthest from our purpose. For we have had abundant forbearance from all boards of selectmen. We speak method. And we say unhesitatingly that it is a ba schools are not thoroughly and systematically kept in result, you go into our schools, you find them full of called minor dilapidations: here and there pieces of pla a seat broken, a blackboard crumbling and nearly un blind dropping to pieces, a fence leaning all ways, possi two broken. Your committee can think of various me ing for the school-houses far better than the one now p town can in the first place, while leaving the busine where it now is, in the hands of the selectmen, direct school-house, so far as the minor repairs are concerned in complete order every year in the long summer vaca quire the selectmen and school committee to establish a for the larger repairs, such as outside and inside painti as often as once in five or six years, every school-house, possible, shall be put in as good condition as when Again, our town can do as some others have done, p charge of the repairs of school-houses in the hands of committee, and place a specific sum in their hands with the work. Or, yet again, the town can appoint a mixed from each board, and commit a definite sum to this bo authority to act. Your committee propose to bring this tion before the town, for they have a firm conviction matter of repairs of school buildings there must be more more thoroughness, and more system, else before we th stead of having eleven trim, good-looking, well-to-do shall have eleven old, dilapidated school-houses. That ing it strongly. But we want to state it strongly enoug town to think a little.

If your child is really ever driven, then we say that yo into one of three classes, and that the remedy is in you parent, and not in the hands of the committee. First, the reason or another, from its own ambition, or from your it, your child has taken his place in a class where member three years older than he. And now that the studies in

sturity of mind, he can pursue them only by too great strain on the ental faculties. The remedy is for you to take the child out of nool for a year, or to permit him to drop a class in rank, not for ildren of thirteen to wait for one of ten to grow up to them. Or, cond, your child is a child of a good, fair, average mind. He is not narkably quick in anything, but he desires or you desire for him at he should take what his Maker never intended that he should ce, the first rank in scholarship. To do this he studies a fabulous mber of hours out of school, and perils health and life. The remedy re is, let the boy or girl honestly and earnestly study the number hours consistent with preservation of good health, then let them and where they may, at the head or well down in their class. the place given them to fill, and filling it, they will be ten times as ely to become strong, useful men and women, as if you began by aring out their brains and by breaking down their bodies. ur child may for one cause or another be in poor health. eat misfortune. But the child is not responsible for it, you are not ponsible for it, and the schools are not responsible for it. eat misfortune. But what shall be done about it? Shall fifteen or enty healthy boys and girls be kept at half-pace to accommodate e in poor health? Would that be wise? Would that be just? e remedy is in the parent's hands alone. Let his child come to nool as an invalid and learn such branches as he can. In other ords, let him do the best he can under circumstances that one would dly alter if they could.

School Committee .- G. REYNOLDS, Chairman; D. G. LANG, Secretary.

### EVERETT.

Reading and Spelling.—Reading, in its most cultivated state, is e of the highest and most desirable attainments in scholarship. It the chief means of acquiring knowledge. To speak the English guage with accuracy, to spell its words and understand their means, and to write it so as to express our thoughts with clearness, are complishments of the highest value. To attain to excellence in ding requires much careful practice. It is more a practice than a dy, and should receive a large share of attention through the entire area of school education. This valuable art has been appreciated in ages of the world. On this subject Nehemiah (ch. 8, v. 8) makes to of the following language:—

'So they read in the book in the law of God distinctly, and gave sense, and caused them to understand the reading."

Read distinctly, give the sense, and cause the hearers t the reading. Here is a comprehensive rule for good rewe hope will be observed in all the schools.

School Committee.—James G. Foster, Chairman; Charles F. Atw G. S. Marshall, J. H. Whitman, H. M. Currier, J. F. Wakefield.

## HOLLISTON.

Let parents remember that they are under weighty which are not discharged till every child enjoys the be school privileges. Children have a right to demand of an intellectual culture, equal to the demands of either a professional life. The expense of sending your children mon or even High School, is so trifling, that no one can prove you must board and clothe them, whatever they do, a will tax you the same, whether you send them to school n law requires or not.

Remember it is a great wrong to a child, without good deprive him of regular attendance. Many parents al remain out of school to play, run of errands or perform a We would encourage you in teaching the principles of diand self-reliance to your children, but we do think the hing them from school to labor, under ordinary circum serious fault. You had better apply yourselves the me economize the more closely, and struggle with poverty rather than deprive your offspring of a respectable education.

Take good care of the health of the scholars. During the parents place in your hands the physical well-be children. An injury or exposure may be received which inconvenience and suffering through life. Careful scient tion by medical men in different countries clearly sh foundation of many diseases is laid in the school-roor agree with Dr. R. Vinchow of Berlin, Prussia, that "this of the gravest importance to the future of our nation, de more attention than has hitherto been devoted to it." to say: "Too exclusive care has perhaps in many cases b on the mental development of the young, frequently o the youthful mind, the truth of the old adage, 'a sour sound body' being forgotten." It is true, that many tracted in the school-room may be outgrown or cured, suggests that a little caution is the best cure. It has l marked by an eminent physician, that "The preventio is of greater consequence for the full enjoyment of hea ng of them." It may not be amiss to mention some of the chief gers, as they are given by an author already quoted: 1. "The ated air, by reason of so many children being in one room. 2. quent colds produced by the change from the hot school-room to cold air. 3. Dust in the school-room. 4. Impaired respiratory rements produced by continued sitting." These brief statements we that great care should be taken to preserve scholars in the enjoyant of perfect health. There will doubtless be exposures beyond r control, but a faithful discharge of duty will secure a good science.

School Committee.—R. F. Whiting, D. W. Freeman, W. J. Hambleton.

#### HOPKINTON.

Absence.—Judging from the actions of many parents, it would ear that they do not clearly comprehend what is necessary for a olar that he may succeed in his various studies; but think that the ence of their children from the school-room one or two days, or ts of days in each week, cannot interfere with their studies, as they make it up—being smart, as their fond parents think—the next . If they would apply the same practice to their own business result would teach them that time was a necessary element in the cess of the business relations of life. Suppose the mechanic should absent from his labor one or two days, or parts of days, in each ek, would not pay-day convince him that absence from labor was rious evil? And what time is to the mechanic and business man, t is to the scholar. The absence of a pupil from a single recitation ot only an injury to him, but to the whole class of which he is a mber. Therefore, the parent that takes his child from school, just carry father's dinner, not only injures his own child, but robs ers of that which he can never repay.

There is a law in Saxony and Prussia making the absence of a colar, of proper school-age, for ten continuous days, *prima facie* dence of fault on the part of the parents or guardians, and subjects m to a fine, only to be remitted on satisfactory explanation, under

a law like that, perhaps, would be severe for a country like ours, it would, in many instances, be productive of good results in preting avaricious parents from filling their pockets by robbing their dren and letting them grow up in ignorance,—the chief source of me, poverty and degradation.

Orawing.—At the last session of the legislature of Massachusetts.

Act was passed, which makes drawing a required study in all our

Public Schools. The committee did not deem it advisal duce drawing in our schools the past year, as the first termenced before the law was passed; but we think measure taken for its introduction as soon as possible.

Drawing is not only an accomplishment, but useful in e of civil society. It is the foundation of painting, and utility to the sculptor, the architect, the engraver, and th neer. There is no branch of the mechanical art, which is to the art of drawing, from the builder of a locomotive endesigner of a lady's hat.

To be able, at any time, to make a sketch of a fine build tiful landscape, or any curious production of nature or o only desirable, but in the highest degree useful and entert

The same faculties of the mind and the same physics the body are called into action in learning to draw as in write; and no one is born a draughtsman more than he is

For the Committee.-C. MESERVE.

# HUDSON.

We have good reason to believe that, in some instances, not only been neglectful in respect to irregular attendan lent it their sanction and countenance, by rendering ex teacher for the absence and tardiness of their children, there was no good reason why they should not have been 1 their places. If perchance the skating was good, or there handbills to be distributed, for which a few pennies might h buy toys or confectionery, or a circus or puppet show come it seems to some parents to be a sufficient reason why a leav should be granted. Let those parents remember that hal gence and irregularity soon become permanently fixed remember that absence from or irregularity of attendan of business would not be tolerated by good business m employé of any kind would soon be discharged for such a think that it would be at least as great an error to negle attendance at school.

School Committee .- J. L. HARRIMAN, WM. S. HEYWOOD, GEO. S. RAY

### LEXINGTON.

The number of pupils who enter the High School is p ciently large, considering the population of the place; but to be regretted that so many are willing to leave at any se, thus depriving themselves of their only remaining opportunity only, and at the same time breaking up their class, which in some ences is reduced from fifteen or more to two or three. Any school is suffer from such a disintegrating process as this. The hearty rest which the members of a class naturally feel in one another is destroyed, the studies become less attractive, and the esprit dues is broken.

he evil is not peculiar to this town. All New England and crica suffer from the same cause. Much of the superficial knowled with which, as a people, we are justly charged, is owing to that easi impatience of school life, and that unwillingness to keep the I upon any subject long enough to master it, which characterize the best of our literary institutions.

ne haste to find manual employment or an eligible mercantile ation has led many a young man to regret, when it was too late, he had not properly qualified himself, by mental discipline and bugh knowledge, for the position to which he aspired. Let the day be applied where it belongs; and let our promising and ambia youth strive, even with personal sacrifice, if need be, to furnish aselves with that broad and liberal culture which the age increased demands.

timately connected with this is the attitude and bearing of the in school. We often see children sitting lazily at their desks, they did not know what to do with their limbs, and when called cite, standing in an awkward, listless, inattentive manner. All can be remedied by proper attention and drill. Even the most omising cases will soon yield to careful training, and when a new better standard of manners has been fairly established, the scholwill take pride in conforming to it. And something more than a appearance will be gained by this; an improved state of health also be seen.

is no small matter to secure a good physical development, and well known that the foundation for many a disease is laid at old through the neglect of proper rules of health. Children should night that an erect position, whether in sitting, standing or walkers necessary to a free and vigorous expansion of the lungs, and ters should always attend scrupulously to the matter of ventilation. In of the dulness of school children is owing to the impure air in they are obliged to breathe. And it ought not to be beneath attention of any teacher to give his pupils (whether they have school-book on the subject or not) sound advice concerning such mon-place matters as dress, diet, sleep, cleanliness, &c.

Acol Committee.—Edward G. Poeter, Charles Tidd, Jonas Gammell.

### LINCOLN.

The advantages of a thorough drill in our schools entirely in the acquaintance made with branches of sof which knowledge is manifest in the common int nor in the discipline of the faculties of the mind; but thirst for knowledge, and a love of reading, and thus and habits of mind which greatly shape the future car The activity and discipline given to the mental power satisfaction in continuing, to some extent at least, the sition already made. The intervals of leisure, so of frivolity or vicious amusements, will be devoted to bo

The fact that a very large majority of our schola other school advantages than those our own schools sideration which should stimulate the citizens to ma tages as great as possible. The committee bear testing that the town has cheerfully responded to the cal appropriations.

School Committee.—Henry J. Richardson, William Foster, James Farrar, William Mackintosh, Samuel Hartwell.

### LITTLETON.

We are glad to report a gradual improvement in instruction in most of the branches, and in none of t ment more desirable than in reading; a branch which chief means of acquiring knowledge, but, in its most one of the highest and most desirable attainments in

In teaching geography, too much reliance is placed It is a matter of mere memory with many pupils, a say, with some teachers? How much it disciplines the mit lesson after lesson for the purpose of simply recit the teacher, is a question about which there ought to of opinion. We know the practice is disgusting to mit teaches them very little that is of any practical branch, we are happy to say that much attention has map-drawing. In some of our schools the maps, in have been very excellent, doing the pupils great creamd good taste in execution. They never fail to be in exercises, and the knowledge thus obtained is far mormanent than that obtained by any other method.

Chairman.—Henry T. Taylor. Sec'y.—Peter C. Edwards.

## LOWELL.

The subject of school architecture has of late years received much ention, and has to some extent seemed to be a matter of rivalry ong the cities of this part of the country. In many places a few septionally fine buildings have been erected, the great and unnecesty cost of which has been made the excuse for leaving many of the ler schools to toil along in very unfit school-houses. Something an equality of accommodations should be aimed at. Every school ould be provided with dry and spacious yards, surrounding a neat, steful edifice, which should have in all its rooms wide areas and sage-ways, a liberal amount of light and sunshine, and should be only warmed and ventilated. These are essential requirements, it thout them all to the full extent, no school-house, however costly, a good one, and with them no house can be essentially bad.

The problem seems to be to combine the good qualities of a schooluse in a style of building so cheap that all the schools can be proled for in a similar manner. The city of Worcester is attempting
solve it by providing each of her districts with a school-house,
bracing the modern improvements and accommodating from four
ndred and fifty to five hundred pupils, at a cost not exceeding
0,000 each, excluding land. If such a house can be built without
brificing anything of educational importance, and \$30,000 be saved
the cost of another house of no greater capacity and no better as
light, air, warmth or space, it would seem to be the true policy to
ect the cheaper style, though depriving the city of an ornament
d a building for exhibition to strangers. The \$30,000 so saved, it
rested, will earn interest enough to pay the salary of a master for
e school forever, an endowment much to be preferred to architecral display, however excellent.

One highly important point in a teacher is an intention to teach for long term of years. Frequent changes, inexperience succeeding experience, have produced much mischief in our schools, and a Priary teacher's certificate has been too often regarded merely as a cort and convenient bridge, connecting the High School diploma th the marriage certificate. We by no means expect teachers on tering our service to dismiss all expectations of an eventual domessettlement, but we do desire that those who put their hand to our ucational plough should not look back until they have performed a r share of labor. To secure this degree of permanency, reasonable laries must be paid. Our teachers, to be what they ought, must let that by faithful, steady service they are making a reasonable pro

vision for after life. Then will more thorough preparat for the work, and the calling come to rank as a profession women spend two years in a State Normal School, fitting for teaching, they have a right to expect a higher remure can those who have never given a single day to such prejit is economy to give it to them. Poorly paid or ever apprentices are not often profitable help, while faithful plished journeymen are always cheap at high pay. Teac decidedly no exception to the general rule, and finds experience as valuable in its laborers, as does any other of the sun.

During the last year, the legislature has passed a l drawing to be taught in all the Public Schools of the ordering all towns of more than ten thousand inhabits annual provision for free instruction in industrial or meching to persons over fifteen years of age, in day or even under the direction of the school committee. In obed salutary law we have caused drawing to be introduced branch in all our schools, and have put it under the temp of the teacher of writing. The schools for adults have a organized, but probably will be as soon as a system of a tion shall be agreed upon for the principal cities of the think a special teacher of drawing, to educate the other superintend their work, should be employed for the next at least.

The importance of drawing, as a branch of public instance been recognized in the manufacturing countries of Europtime, which fact has given them great advantage in the Sixty years ago, the great Napoleon caused drawing to prominent study in the schools of France; the success of of that country in decorative and ornamental production the results, bringing immense wealth to its shores from our own paying no small part.

In Germany, the teaching of drawing has been univers ations. A teacher who could not draw and teach drawin sooner be employed in one of her schools than one we learned to read and write. This training shows itself in skill and accuracy of the German soldier, and it adds we walue of the German mechanics, enabling them, in some country, to get from fifty cents to a dollar a day more the of equal merit in other respects.

At the World's Exhibition, in London, in 1851, wit manufactures requiring artistic skill, England stood low

ng the countries represented, and the United States stood lowest I. The educators of England, aided by the manufacturers, immely caused drawing and artistic schools to be established in all the towns of the kingdom, for the training of her workmen and awomen. The result was that at the Paris Exhibition, sixteen a later, England advanced from next to the foot to the first place he list. Is mortification any adequate name for the feeling with how learn that the United States continued to stand complaty at the foot?

arious attempts to introduce drawing as a regular school exercise is country, have failed. Rembrandt Peale had two great ends in one,—to paint a Washington that should go down to posterity, the other, to devise such a course of lessons in the art of drawing young boys and girls should learn it as universally as they learn ing and writing. He accomplished the first, and to the second ted the labor of many years, which he embodied in the form of tle manual for school use. Several educational gentlemen in adelphia exerted themselves, for a long time, to procure the adopof this manual as a part of the regular school course of that city, n time were obliged to yield to prejudice and abandon the field. st year, Hon. Henry Barnard, then United States Commissioner ducation, said in his report:—"The government of the United s is the only civilized government of the world that has done ically nothing for the encouragement of art, either in its elementor higher forms. The State and municipal governments have , if possible, less."

change has commenced, the educators of the country having sed in all directions. Cincinnati employs six public drawing ners, at an expense of \$5,700. New York, San Francisco, Philania, Brooklyn and Chicago have made this branch a part of their ol instruction in all grades, and now our old Commonwealth has duced it by law into all her five thousand Public Schools.

e may expect results at least equal to those reached in England, nay have a reasonable hope that sixteen years hence we shall disappeared from our accustomed place at the foot of the list. speak of drawing only as applied to training the hand and eye dustrial purposes, for that is, we think, its valuable feature as a ch of public education.

awing is the written language of the eye, even as words are the en language of the brain. It is especially the language of anic art. Constant difficulty is experienced for want of workwho can even read this language—that is, who can work from a ing or plan without constant explanations, which machinists say

is the cause of no small loss in dollars and cents to be and employed, and consequently to the community at therefore from this point of view that public educators a called to regard the subject, leaving higher walks of a sidered in future years.

The Drawing Schools for adults can best, we think, with our free Evening Schools. Of this latter class we in operation, conducted by thirty-three teachers and eight hundred and seventy-nine pupils. These schools of larger to great advantage. They are attended by a ver class of pupils, and are doing an admirable work. with which instruction is sought by nearly every attend iness with which ideas are grasped, and the perseverar fulness shown by full-grown men and women in search o tion of which they were deprived in childhood, give the new idea of the value of these schools. The young assembled can in no other manner be subjected to influences, as to manners and morals, during their sp while even the rudiments of education are accessible to in no other practicable way. They throng our school correctness of their deportment and their anxiety to re a little information, show their hunger and thirst fo Shall we hesitate to provide for every one who will comand expand our Evening Schools until all who knock Shall the cry for light of one of these souls be unheeded for the bread of knowledge be answered with a stone?

Chairman of Committee on Report.-John A. Goodwin.

Truancy and Absence.—The attendance in the school year has not been quite as good as last, owing probably sive heat of the summer term. The duties, however, of truant commissioner, Jesse Huse, Esq., have been as fair promptly discharged as ever. From his report, I extract statistics:—

Number of orders from superintendent's office,										•	
46	recei	ved fr	om te	eachei	rs and	l pare	ents,	•	•	•	•
	To	otal,	•	•		•	•	•	•	•	•
Of the											
. "	46	66	"	abser	itees,		•			•	
Childre	n <b>wb</b> o	had n	<b>676</b> T	been	meml	) ers	f any	city	scho	ol, or	D67

Many of the new scholars were French who would not have gone voluntarily, but who, when placed in school, soon made commendaprogress both in speaking the English language and acquiring the liments of an education.

moer a	rrestea a	urınş	g tne term,	•	•	•	•	•	•	•	•	99
ried b	efore the	cour	rt,		•	•	•	•	•	•	•	26
			m School,								•	17
led an	d returne	school, .	•		•		•		•		9	
on pr	obation v	vitho	ut going be	fore	the c	ourt,		•	•	•	•	9
es of 1	misdemea	DOTS	investigate	d on	comp	olaint	of te	acher	ъ, .	•		26
urned	to school	the	second tim	е, .	•			•				102
			third time,									

Mr. Huse closes his report as follows: "I have found but few cases long-continued truancy, many of those reported to me as truants urning to school on learning that notice had been sent to me of air delinquency. I still consider unnecessary absence the great evil our schools, and the hardest to remedy. When it is absolutely cessary, on account of sickness or any other cause, it is excusable, at where parents allow their children to stay at home for trivial cases, and cannot be made to see the difference between constant endance and frequent absence, it becomes an evil not easily remarked. If all the absences reported by teachers could be traced to be real delinquents, it would be found to be confined to a few, and as two or three in each room spoil the average of the whole school."

Superintendent of Public Schools.—CHARLES MORRILL.

# MARLBOROUGH.

The High School should be an institution meeting the high educational wants of the community. These wants are determined by a natural ability and prospective occupation of the pupils. It will of no service to enter here upon the discussion of the vexed questro of the comparative advantages of the study of the classics or a sciences as a mental discipline. Both have great claims upon the cention. That we should have a classical course, where our young en can fit for college, and our young ladies for the higher seminaries learning, few will deny. The real question is, whether all, without gard to abilities or prospects in life, should be obliged to give a part their time (which is in many cases very short) to the study of a ad language (which they cannot pursue far enough to be either a curce of enjoyment or culture), or be left to give their undivided

time and energy to those studies which tend directly to fit active work in life.

The High School should meet the wants alike of those we forward to a long course of training and culture, and those we but a short time to give to the furnishing of their minds. points in one direction to a life of contemplation and study, also point in another to the occupations of business life. leads to the college, it should also lead to the technical soll should be the friend of all,—the helper not only of him we the wide fields of culture, but of him who is fitting himself wide fields of business. We should have a classical and an course; and a choice should be carefully made by the parent pils between the two. We should have a course which should not rigid, and up to the standard of a first-class High Sch at the same time, one which will bend, not to caprice, but to wants of the community.

Truancy is another and still harder question which we meet, and from its prevalence demands the attention and the exertions and cooperation of all our people. A casual observables our streets will find evidences everywhere, that eischools are not in session, or that large numbers of children of school. The laws on this subject are like laws on every subseless, unless supported by an active public sentiment.

There is still another cause which operates as a hindranc efficiency of our schools; but it has, at least, a plausible excuhere, too, the interest of society and the good of the individu be vindicated. Many children are every month discharged in schools to go into the shops. It is sad to think of dwarfed m bodies which must inevitably result from the apparent neces our children should be obliged to contribute of their strengt support of the family. The rights of the intellectual nature however, be carefully guarded. It is very difficult, at preascertain whether these children have been at school during t months which the law requires. We should, on this point, ha stringent regulations. A discharge-ticket, signed by the teacher chairman of the school committee, should be required by eve ufacturer before a child could get employment or draw pay. would be no trouble about the enforcement of such a regulat the manufacturers would without doubt, one and all, be glad the subject vigorously in hand.

The number of children employed in our shops warrants the duction of a new feature into our school system,—a factory time school. In several manufacturing towns this has been do

good results. Some account of these schools may be found in H. K. Oliver's Reports, Senate Doc. No. 44, 1869, and Senate No. 120, 1870.

ne method and working of the school may be easily inferred from collowing extract, which is taken from the report of Mr. E. A. bard, superintendent of Public Schools for the city of Springfield, no year 1869:—

The 'half-time' school at Indian Orchard was opened a year ago be benefit of those children who worked in the mills, and who work for their own support. How, then, could they obtain the ation necessary for themselves, and required by law? To meet lemand for education and for a support, the Indian Orchard Mills cany send about thirty children from their mills into school three a day. \* \* These children have made good progress; I think, learned more than half as much as they would in an ary school; and therefore I think the six months in a half-time I more than an equivalent for the three months formerly required all-day school. I had hoped that, before this, we should be so have the half-time school continue all day; that is, to have one children out of the mills in the forenoon, another in the aftermand I still think we shall attain to it."

this we add the opinion and experience of Mr. C. J. Goodwin, of the mills, in a letter to Mr. Edward Atkinson:—

the scholars leave work at twelve o'clock; school commencing at clock, and closing at four, with fifteen minutes' recess each sesting at the parents of the children attending school are pleased with the arrangement. I have not had a case of truancy sed to me: this shows that the children like and appreciate the m. \* \* I cannot as yet compare the earnings on job-work; find that, where the children were before losing from one to ays per month, they are now working full time during the hours ed to labor, the school-hours being a real rest to them. I am ing the working of this school with interest; and, while I do sh to arrive at a conclusion hastily, I fully believe that the half-yetem is practicable; and, wherever adopted, the manufacturer I as operator will derive a benefit from it."

col Committee.-W. D. Burdett, S. N. Aldrich, Calvin Stebbins.

#### MELROSE.

education is the supervision. The experience of every comisthat schools need such oversight and guidance as can seldom

be given. Proper classification of pupils, suitable prog plan and practical results, can only be attained by the co tion of some superintending authority. Without such ence, even good teachers become listless and indifferent pably negligent.

But such supervision requires a man properly qualified paid. How can towns like Melrose, heavily taxed a such a luxury? The solution of the problem will come realize that three hours in the school-room is sufficient and that teachers could, therefore, instruct, in the true term, twice the present number of pupils. Two those could be saved annually, if so many were not anxious their children, regarding schools as a public nursery. customary hours were maintained, twice the present number of pupils, during one-half of the day, could be taught music drawing, or listen to instructive lectures, saving, at least, salary in four. Our annual appropriation is sufficient, we cal changes in our system, to have our schools resemble ized factory, every workman in his place, and the fulle work being done.

School Committee.—CHAS. H. ISBURGH, W. H. ALLEN, F. P. WOODE

### NATICK.

The second term commenced the first week in Septen tinued until the week before Christmas. During this the Teachers' Institute, which was held this year in this request of your committee. We hoped by this means lic attention to the schools, and to create a new interest of education, as well as to awaken a new zeal in the teachers. We therefore suspended the schools during the Institute, and required the teachers to attend its se they very gladly did, with manifest advantage to them their schools. The good people of this town, with the which they are always wont to extend on such occ opened their doors and freely entertained the large attended, and we believe a new impulse in the right given to our schools. Our teachers, as well as the co encouraged to go forward with new energy in the work the system of public instruction in this town, by the fested by our citizens on this occasion. The instruction i and means of teaching, given by the able and accomplish who had charge of this Institute, and the public lecture in in connection with it, were all duly appreciated by the people of town, and have undoubtedly influenced public sentiment in relato matters of education in very many ways for good. We cannot mend too strongly the practice of the State Board of Education, colding Institutes like this in the different sections of the State.

the committee have called the teachers in this town together sevtimes during this year for the purpose of considering special cs connected with the discipline and instruction of schools. It been our practice to select a particular topic for consideration at meeting, and upon which some one was appointed to write an y. After the essay had been read, the topic was opened for gendiscussion and suggestions by all the teachers, and usually a ement of the methods of instruction of each teacher was made in hearing of all. These meetings, thus conducted, have we believe n interesting and profitable, and have given to many of the teachvaluable hints and assistance in the discharge of their duties in ir respective schools.

There are no schools where greater skill, tact and patience are uired, than in the Primary classes, and we believe a good Primary teacher is deserving of as much if not greater consideration pay as the instructors of the more advanced classes. In order raise the standard of excellence in our schools, we have felt that must begin our reforms in the Primary departments. If we only secure good Primary instruction, its influence will almost at the pervade all the more advanced classes. We think we have complished something in this direction during the present year, and hope that more will be effected in the year upon which the schools wenter.

We have given special attention to reading and spelling, matters of nost importance, and yet too often neglected. Parents, in their at anxiety to gratify their children's natural ambition to get ahead, y often encourage them to push forward into Readers which they mot possibly understand, as well as into studies like grammar and ography, which are not only altogether beyond their comprehens, but also to be studied in text-books which these ambitious pils cannot even read. We have found classes who could not read a text of the lesson in geography which they were required to learn. It is wish in the most emphatic manner to warn parents and teachers a wish in the manifest evil consequences of hurrying children forward to text-books which they cannot read. There are serious evils of a kind existing in almost all our schools, which can only be cured slow processes, and with the consequent loss of much valuable ne to the scholars. The principal work of all our Primary and

Intermediate Schools should consist of learning to read a and this should never be forgotten by either teachers, pare mittees. A programme of studies should be established requiring proper attention to each branch in its natural pl mar, for instance, should never be studied until both bod are well matured, because, being the philosophy of lang only be understood by those in whom the faculty of reasoning has been cultivated and developed. It seems grammar should come last in the course of studies in Schools.

Geography, as it has been commonly taught in the schoour opinion, been to a great extent a failure. The exateachers discloses the fact, that even the best scholars, a pare themselves specially for the work of teaching, are of ably deficient in the knowledge of the common and ordin this branch of study. Whole classes of intelligent pupils memory very glibly long passages from text-books, often out understanding a word of the language they are repeatlasses become utterly bewildered as soon as any quest pounded in words which do not conform to their text-truth is, that in the study of geography, as in most of pupils are allowed to cultivate the memory of words, without any particular meaning to them.

For the School Committee .- John W. Bacon.

# NEWTON.

We may well be proud of our High School. In the siveness of its course of instruction, the intelligence of its skill of its instructors, and every positive advantage for le all we have a right to expect, while we may hope for m moral advantages, we see the results in a degree of courtesy, grace and mannerly conduct, that can only be among pupils of an age at which petulance, impatience a agement are likely to prevail, by the positive example ar of the teachers. We are bound to say that a large share of faction with the school is due to the refined moral influgentlemanly principal and his accomplished assistants.

For the Committee. - JOHN B. GOODRICH.

Grammar Department.—At the close of the last year, I fully studied the educational facilities and demands of t recommended to the board the introduction of other

es for the first classes; thus enlarging the sphere of usefulness of a schools, from which a majority of our pupils go out into the eduties of life. This recommendation met with the hearty connece of the committee; and the studies of the history of the ed States, and physical geography, were introduced at the beginof the year. This measure, while it was most gratifying to the ers, proved an incentive to the pupils who entered upon the swork with renewed zeal and interest, feeling that they were to something to do other than to review those branches upon which had been drilled from the day of their entrance into the Primary ol. These studies will be completed during the year, while no g away has been noticed in the common English branches; and sel sure that we have the entire good-will and thanks of the pupils habling them to enjoy a taste of the higher branches, heretofore need to the High School.

awing has also been elevated into a regular study; and a set of Drawing Charts has been put into every district while a system-course has been marked out. Thus far we are entirely satisfied the progress made; and we trust, in the future, to be able to the pupils still farther on in the education of the "eye and" till our Grammar Schools answer the demands of the statute ding "mechanical or industrial drawing."

e are also of the opinion that no pupil should graduate from the mar School without some knowledge of single entry book-keepand we are satisfied room can be made for this study by pursuing true and economical methods of teaching arithmetic, geography trammar, upon which so much valuable time is spent.

r the Committee.—GEO. E. ALLEN.

usic.—An endeavor has been made the past year to increase the ncy of the instruction in music in our schools, especially in the mar department, where the teaching combines the science and t more than in the lower grades.

y one doubting the utility of music as a part of an education aly to know the difference in the character of our lower grades tools where music is now taught, the cheerfulness and general ior, and what it was without a song from one week's end to the

It is well known, that a child will sing when it is happy, and cannot sing when sullen or cross.

pur Primary Schools, singing is a sine qua non. With a song persed with the other exercises, the restlessness of the little ones eved, attention is restored to the inattentive, and all care seems away. No session of school should pass without music being

a part of the exercises. What would a church-service music? So with the school. Even our lyceums and liters are introducing music into their exercises.

Who knows but what the time may come when our tow shall be opened with a song?

There is no reason why the American people should not cal as the German. The education must begin with the chione cannot be a musician; neither can he be an orator; learn to read music as well as to read his mother tongue.

For the Sub-Committee.—HORATIO F. ALLEN.

# READING.

Towns may authorize their school committees to appoint tendent of schools. The advantages of such an appointm vious, but it is difficult to find a suitable person who can at duties in a small town without detriment to his business. us that several towns might unite in appointing one many serve in that position for each town uniting in the appoint field of his labor should be large enough to employ all his salary should be paid by the several towns in propor interest of each. He should be a man specially adapted thave a heart large enough to take into its sympathies evor of his field; a head to comprehend its educational needs; ment incapable of being perverted by local influences. Scapable of suggesting improvements, of aiding teachers, of faults and errors, and of effective labor wherever needed, most valuable acquisition to the schools favored with his sence.

School Committee.—HIRAM BARRUS, Chairman; E. HUMT, W. J. WIE MORTON, S. E. PARKER, C. B. McLITTER.

#### SHERBORN.

At the close of the fall term, it was thought best by you and by the parents in the district to suspend this school ter, and make provision for these children in some other accordance with the spirit of an Act of our State legislature for the conveyance of children to and from school, it was that these children should attend the school in No. 1, and person should be employed to convey them to and from term. This proposition was approved by all the parents, a Eight scholars have been thus transferred to the school in

the town. They have been very regular in their attendance, more robably than they would have been in their own district, because have been conveyed to and from school. The arrangement has pleasing to parents and children, and has thus far worked well. of course only temporary, as it will very likely be necessary to be the school during the present year. But this experiment is an aple of what may be economically and wisely done under similar mustances.

chool Committee.—EDMUND DOWSE, WILLIAM BROWN, ALBERT H. BLANCHARD.

# SHIRLEY.

important requisite of a good school is a faithful superintendcommittee. It is too late to ignore the advantages that come
this department of school government. Both teachers and pueel the influence of its movements; and are stimulated to ined action through the responsibility laid upon them by the existof such a board of overseers. When, therefore, we have a lax
nittee, one that is careless of duty and thoughtless of the instin it has taken in charge, we may expect that money will be
ed, time misspent and all the means of primary instruction sadly
erted.

a matter of conscience, no less than a matter of duty, the reibilities of this important office should be met and discharged ding to the best ability of every incumbent. Whatever other yment he might have upon his hands, he should never allow the s of this place to be of secondary importance. He should visit chools as required by law, and make special visits when any d cause should demand. He should counsel the teachers, rebuke folly, and help their efforts in well-doing. He should mete out ords of praise and blame to the pupils, illustrating to them the cter of merit and demerit, and encourage them to persevere in ay of obedience and progressive effort. He should feel that of the success or failure of each school under his charge ded on his fidelity or want of fidelity. He should also listen to omplaints of the parents and patrons, look into the merits of complaints, correct their mistakes, and adjust every difficulty ted as well as the circumstances of the case would admit. If s way he could not please all, as he most surely could not, he show his interest in the cause he was elected to sustain. And sing generation would bless his labors, inasmuch as they learned reciate his motives.

ool Committee.—James O. Parker, Seth Chandler, Samuel Lobglet.

# SOMERVILLE.

The influence of a well-regulated High School is not those only who become members of it; but, standing the head of our Public-School system, it reaches out an various schools in the lower grades, and extends to ever posing them.

Heretofore the opinion has prevailed that our High So its excellences, was not fully meeting the demands of the The records of the school show that a large proportion who enter it do not complete the course of study and greater

applies more especially to the boys.

It would give us great pleasure if all of our pupils to the end, the entire course of study prescribed for the avail themselves of all the advantages furnished by opublic instruction. Since, however, this desirable restriction, and all cannot be induced to pursue to its couniform course of instruction, we deem it wise to narrangement of the studies of the school as will meet wants of the community and secure the highest good on number. "If the mountain will not come to the propheto it." The High School being a public institution, ageneral taxation, should be adapted as far as practicable necessities.

To meet, as far as possible, the wants of all, and to still larger number of the graduates of the Grammar Sch themselves of the advantages of the High School, even for a brief period only, we introduced at the commence present school year, an

English and Mercantile Course of Study.—The entire braces a period of four years, and those who complete is diplomas. But, with proper restrictions, the studies of will be elective, and so arranged that those pupils who does complete the course, can pursue those branches which is

greatest practical utility to them.

All persons, whatever may be their pursuit in life, sho knowledge of all the branches taught in the Grammar Sch the studies of those schools should not be elective. Bu a period when young persons exhibit a preference for so calling or profession, and generally their preferences are tion of their capabilities. These tendencies are develop

han in others, but usually they are manifest when pupils arrive age to enter the High School.

ancient philosopher, who was asked what a boy should learn young, answered discreetly, we think, when he replied, "What wish to practice when he becomes a man." Therefore when pil enters the High School, or as soon certainly as his tendence manifest, his studies to a certain extent should be elective, pecially adapted to his contemplated profession or pursuit; and aptation should gradually become more direct as he approaches d of his school course.

pupil who is looking forward to a bank or counting-room for ment, and who has only a brief period to attend school, should much of his time to gaining a knowledge of accounts, and in ng elegant and rapid penmanship. Another, having a preferror the mechanic arts, will need a practised eye and hand and ough knowledge of the particular department of his choice, the study of mechanics and practice in mechanical drawing absorb much of his attention. Still another, who is looking ocean for employment and designs to become a ship-master, sed to be a merchant as well as navigator. He, therefore, devote his energies to securing a knowledge of accounts, of try, logarithms, trigonometry and astronomy.

regular classical course, the studies of the first year or two inly preliminary and preparatory to those which are to follow. pupils with the intentions specified, have but a brief period to school, it may be regarded a hardship if they are compelled to a large portion of that limited time to studies which are only story to those they will never pursue. All this is obviated by seent arrangement.

cannot refrain from stating in this connection, however, that th caution and a degree of reluctance we make any innovation he regular and uniform course of study hitherto pursued in the

is our appreciation of a thorough and systematic course of and the incalculable benefits accruing from a careful study ancient classics, we cannot disguise our regrets that the nefor the introduction of an English course seems imperative. do not undervalue the mathematics, the natural sciences and a literature. These all have their appropriate places and are ble. But there is a grand defect in the education of those, om necessity or choice, have failed to enrich their minds from antain of classic learning. Therefore we would say to the omit no opportunity to secure a thorough knowledge of those

ancient languages from which our own is so largely mental discipline consequent upon this acquisition is a large class of faculties is improved thereby. It s memory, comparison and judgment, quickens the perothe taste, imparts a delicate appreciation of our own secures a command of it obtained by no other means.

Drawing.—The legislature, at its last session, am section of the thirty-eighth chapter of the Revised to include drawing among the branches of learning said section, required to be taught in the Public School

It was also enacted, "that any city or town may, and town having more than ten thousand inhabitants make provision for giving free instruction in industrial drawing to persons over fifteen years of age, either in schools, under the direction of the school committee."

The conditions of the first section have been comdrawing is taught in all the schools. Instruction will accordance with the second section, whenever it is de-

In the future, an ability to impart instruction in a required of all applicants for situations as teachers. T in the schools will doubtless avail themselves of every become proficient in this important art.

Superintendent of Public Schools .- J. H. DAVIS.

# TEWKSBURY.

The advantages of the present management over a system continue to be manifest. The schools in toware equal length, and the wages of the teachers unifor endeavored to give as many weeks' schooling as por money raised, always looking for the best teachers to the wages offered. But other towns paying higher was times taken from us our best teachers. We ought to higher wages to teachers whom we have proved to excellence; yet, we would not do this at the expense of weeks' schooling. We believe that a larger sum to be judiciously expended upon our schools and ought to

We have had a long term in the winter for the be who have to work at other seasons of the year. The this class are fast drawing to a close; and we wish render them special assistance in their studies, and, in reto throw all the weight of their influence to assist the nay relieve her labors, and contribute to the success of the

ard for Teachers.—That our teachers may ever carry the sunof a bright countenance into their schools, it is necessary that have a pleasant home during their stay with us. In several ness we have found it difficult to obtain a suitable boarding place, he school now loses an excellent teacher for this reason. The wes us power to take land for school-houses wherever we deem ble; but it does not empower us to compel any family to open doors to receive the teacher as an inmate. We are aware that mes it is inconvenient to do so; but are we not willing to suffer a neconvenience for the good of our children? We ask our fellows to consider this matter, and when it comes to a case of necessary during the past year, to respond with more alacrity and thus the committee from anxiety in this respect.

ool Committee.—A. DE F. PALMER, JOSHUA CLARE, GEORGE PILLSBURY.

# WAKEFIELD.

control is the first requisite in those who aspire to govern A kindly spirit, courteous manners and attractive speech cessary, in addition to knowledge, to the best success of all rs; yet some may remind one of a chestnut burr, which presurface of repelling points, so that children, in trying to extract ait, are sadly pricked in the attempt.

d government in school—which is always just and friendly ment—is of paramount importance. It affects conscience and character, which are first to be considered in the education of en. Intellectual knowledge, merely, without moral principle, is than ignorance; and if a person has no conscience, the nearer n mental relation to an idiot, the better it is for himself and a community in which he lives.

stimulate conscience requires in the teacher a knowledge of and child nature, and ingenuity and great diversity of expediment the necessities arising from the different capacities, tements and circumstances of children. Where much is given, may reasonably be required, and a larger return should be acd from ten talents than from one. The child of the feeblest ct should be the most encouraged, and to taunt him with his ility is a crime, for he did not sin that he was born simple.

superior knowledge of the Germans is attributable to their n of education, which compels attendance on the Public Schools st three hours in a day for forty-eight weeks of the year, for eight consecutive years. Every intelligent person known prosperity, security and peace of every community, whether or local, depend in a high degree upon the education of people; yet there are many children in the State of Marand even in the town of Wakefield, of suitable age to attract are denied the privilege. Some are kept from school may earn a penny; others, for no other reason than the afterence of parents and guardians to the vital importance of In our last report, we spoke plainly upon this matter.

It seems to us desirable that the legislature should confitowns of the Commonwealth more authority than they is to compel children to attend school, who without computations at home and grow up in ignorance and vice.

School Committee.—P. H. SWEETSER, Chairman; CHARLES JORDA BLISS, Sec. and Treasurer; E. A. Upton, Lucius Beebe, A. A. Foster.

### WALTHAM.

Physical health is of the first importance, and some o mittee are inclined to think that long lessons to be less school and in the evening just before a child goes to be very injurious. Many a time have we seen a young cl and half asleep, studying or trying to study, and with some simple lesson which might have been easily learned time, and then going to bed with a temper crossed or a s repeat again in his dreams the same tiresome work. Suc not "nature's soft nurse" nor her "sweet restorer;" and o of tender years, to whom sleep and rest are so importan posed to this risk? May not one reason why so many of sleepers, have disturbed dreams and cannot "steep or forgetfulness" during the hours of the night, be partly ow miseries of our childhood, and to a habit then formed of o cares and sorrows to bed with us? It is not the expect committee, nor do we think that it is the intention of the require of the children in the Primary and Intermediate such an amount of study that much of it must be done o hours, nor are the scholars of the High and Grammar Scho to devote more than one or two hours to studying out of may, however, happen that from too great anxiety to st his classes, a scholar may become nervous and excited more time in studying out of school than is proper. perhaps in such a case can correct the evil better than any

School Committee.—Charles A. Welch, Emory W. Lane, Benj. John W. Willis, Geo. Hastings.

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# WATERTOWN.

tool Superintendency.—The committee are not a little disaped that the town is so reluctant in its action upon the measure, equently urged, of providing a superintendent for our schools. For or later the mistake will, it seems to us, be discovered and sted.

would seem that reasons sufficient to produce conviction, had presented in the reports of two years past. But we will present llowing additional considerations.

ose business and professional men who are suitable for the manent of school affairs; who comprehend the workings, wants and sary modifications of school systems; who can properly anticihe demands of an increasing population; and who can judiciouserintend the outlay of public funds, have every year less and ommand of their time. Competition on every hand is so sharp lose that all men, in order to succeed, must in a measure be men e idea. Their own business and professional duties, at least, ot admit of divided attention. They can easily afford to pay e time of another, but cannot afford to give their own. And it ing to be a fact, that a school committee composed of such men ot do all that is expected of them. The present committee do esitate to acknowledge remissness. They have looked faithfully general interests of the schools; they have patiently studied indamental questions of Common-School education; they have for meeting the general exigencies of the town school matters veral years to come; but they have not attended to the minutiæ, what, for the want of a better term, we will call the drudgery ool affairs. They have not had the time to do it. Visits of ommittee upon the schools will grow in numbers less and less, , unless the committee can be constituted of men so limited in range, as to regard the presence in the school-room as the ial part of a committee's work.

ain, let us put this matter upon the ground of consistency.

town votes an appropriation of \$12,000 for highways. For ise expenditure of this money, it is deemed necessary to appoint on to superintend the work and outlay. We do not question expediency of such a measure; nay, we approve it. But the votes for school purpose an appropriation of \$14,000; has, and valuation, upwards of \$70,000 invested in school buildings armiture, which need frequent repairs and alterations; employs y persons as teachers and janitors; has in training nearly a

thousand of its future citizens, and still persists in not I oft-repeated entreaties of the committee, when urging t ment of a school superintendent. What would be thoug poration having this amount of property invested and this persons employed, which did not engage the services of a person to have in charge the business of the concern? We be considered the height of recklessness not to make such Is it less so respecting school matters? The town must a its highways of more importance than its schools. It does that if this proposed measure could receive a few momen ful consideration, our intelligent fellow-citizens would no tate to comply with the repeated request of this committee.

Relation of the Citizen to Public Education.—Never been a time when the problems of education ought to a careful attention as now.

It is while contemplating these questions as essential social and civil prosperity, that we have seemed in this a report to speak with impatience in view of measures looking restrictions and retrenchments; we have spoken earnest from an instinct of self-preservation. George Washing saw in his day the importance of common intelligence in and regarded means "for the general diffusion of known primary importance."

Said Mr. Hoar, recently, "There is not a power vested stitution, either in the congress or the people, towards and accomplishment of which the education of the people surest, the most direct, and the cheapest way." We since to witness the earnestness with which Mr. Hoar is urgin upon the attention of congress. He is right, and should indorsement of every American citizen. Other nations, England for instance, are starting upon a new career in education. The czar had no sooner returned from the P tion than he commenced measures of educational reform to say that the entire English nation is to-day, as never to these great and fundamental principles. It was near the last session of her parliament, that a law was passed a system of universal education, as necessary to the prote national supremacy. Mr. Gladstone, with a keen eye to terests, recently declared that the "victory of Germany is the victory of the Common-School system of Prus ignorance of the French Empire."

Senator Wilson expresses the same conviction, thus: of compulsory education, established for more than two

tions of Germany, and for more than a century and a half in Prushas brought forth fruits which the world sees. France, with a er and more fertile country, with a prestige of a brilliant military ord, but with a population ignorant, priest-ridden and emasculated heir manhood, lies beaten on every field and helpless at the contor's feet. This lesson should not be lost on the American people." It is true. Consider for a moment—we have in this country 1,007,-illiterate white youth and adults; we have also another half ion white children, under ten, growing up in ignorance. These and are to be invested with all the rights of suffrage. Shall we see to it, as far as we have power, that remedial measures, comory if need be, are at once instituted which shall correspond ewhat to the contingencies involved?

morance is always the giant disturber of public peace and public rities; our undivided efforts must, therefore, do away with igno-

is education which doubles a man's value, put him where you; we must not, therefore, complain against or even feel the burs of taxation in the interests of education. It is by liberally eating our people that we make for the nation her surest political warks and defences.

Chairman School Committee.—L. T. TOWNSEND.

### WESTFORD.

ome complaint has reached us in relation to corporal punishment our schools, but in most cases good order has been maintained nout resorting to it. This we consider an indication of improveit, for while we are not prepared to say that corporal punishment ald be entirely abolished, we are confident that he succeeds the as a teacher who punishes in this way the least.

act and talent should, if possible, take the place of brute force, brains are an excellent substitute for birch. All things being al, the more tact and talent, the less birch is needed; but unfortely the conditions vary with different schools, and with the ring dispositions of scholars. Children, like their parents, are er controlled by mixed motives, and to do away with compulsion rely, would be no less absurd than to rely wholly upon it.

Superintending School Committee.-LEONARD LUCE, WM. A. WEBSTER, GEORGE F.

### WINCHESTER.

Drawing.—The introduction of drawing in our school requirement, by the side of the branches heretofore requirestatutes, is an important advance in the right direction. As of the art is not the mere making of pictures, or a dissipation plishment infringing upon valuable time required for stern labor, drawing is not to be ranked with the mere graces of able finishing school.

It is but another form of writing, differing from the art of ship chiefly in its range of useful application, and the train mind for wider fields of useful knowledge. A form become reliable mental property when the hand is able to reproduct accuracy of observation, which drawing alone can most a cultivate, is of the highest practical value; and with a observation is almost necessarily associated accuracy of is description; indeed the clearness of thought and power of ination which mark the man of "powerful mind," rest primaccuracy of observation. He who observes well, will think well.

We have made a beginning with this branch in our schooling the system of Louis Bail. During the coming year necessary to supply the schools with charts and apparatus to an effective system of instruction. Your committee advisable to attempt methodical instruction first in the School, to secure better practical acquaintance with the conthe work, before the course should be definitively prescribe Intermediate and Primary Schools.

The results of the work under Mr. Sanborn's direction artory, and the committee propose to adopt the methods he trated in the inferior schools.

History.—This branch of study, in our school course increased attention. Our reading books embrace intere beautiful selections of literature, a great variety of rhet poetical excellences, and for many years the children are them to make them good readers. Might not a good pro this time be economized for the acquisition of the history of country and State, without sacrifice of the art of reading? for acquaintance with literature, the formation of taste from of choice selections, would seem to belong to a later per child's progress, while for the benefits of instruction in his can be scarcely too young.

But we are not furnished with the proper books devoted to substanhistory, and adapted to the methods of the school-room.

Peter Parley's shadow is of more tangible value to a child than st of the authors, who (with their enterprising publishers) have berseded him in writing history for children. History for children fers indeed from that for adults as the drama does from its rhetori-equivalent in an epic poem, or a spirited picture does from a ical analysis of its parts, and their framing into books for the cary. Such an adjustment of the material facts in our own history may supply the child with pictorial representation, and simple, pressive description, in accordance with his eager appetite for cories," is certainly possible. And it is equally possible to form of a reading good disciplinary exercise in the art of reading. If this shown were practised, our pupils might acquire a knowledge of tory as well as the German pupils of like age, in whom this attainnt is so conspicuous. Certainly our pupils should not complete air school days with so little knowledge of our own country.

The practice of daily reading in United States history, as a class ercise, with accompanying oral instruction from the teacher, has an introduced recently in our Grammar School. Of the results it now too early to speak.

School Committee.-GEO. COOKE, A. CHAPIN, J. C. JOHNSON.

#### WOBURN.

Health.—For the intellectual training of children we rely mainly on the schools. To be sure, home influence may do much to supment and assist the teacher, but after all, the bone and muscle that stitute the mental strength of our children are obtained by patient l persevering labor in the school-room. On the other hand, their vical training is for the most part carried on at home. It is almost lusively in the hands of the parents, and the most that the schools do is to take care that the mental training of the child shall not interact the means that have been employed for his physical develnent. In other words, they must see to it that the mind is not ckened and developed at the expense of the body. It were far ter that our school system, which has been so long our pride and st, to the influence of which we have justly attributed the best its of our American manhood, and which we have regarded as the ndation on which our republic rests, should exist only in the mory rather than that such a calamity should result. This division labor and responsibility between the home and the school, the ent and the teacher, exists of necessity. The wisdom of it is obvious. The training of the mind is intrusted to those : which it can be done most systematically and effectivel other hand, the development of the body is left to those should be best qualified for this particular work. From fifteen years are required for the completion of the full cou in our Public Schools. During this entire period these tional forces are in constant activity. How can they be a in harmony? In other words, How can we secure to t entrusted to our care strong and healthy minds in strong : bodies? Strength and vigor of mind can be obtained only exertion. How much mental exertion may safely be requi is the practical question to be decided. Nor is the decisio It would be presumption in us to attempt to decide it. U tion of such vital importance the most eminent medical ski brought to bear. Fortunately for us this subject has e attention of the medical society in our own vicinity, and t its deliberations has been published in the form of rules In the school report for 1865, to which the names of t present school board are appended, these maxims were pri careful consideration of them solicited. The importance ject is my only apology for introducing it to your notice propose to present such facts in regard to the practical wo schools as will enable you to judge in what respects we plied, and in what we have failed to comply, with the which I have referred.

The first maxim, "No child should be allowed to at before the beginning of its sixth year," has, I regret t almost entirely disregarded. As long as parents will cown convenience rather than the best interests of their clevil will continue. Under the existing laws the school have no power to refuse admission to any child five y They may give advice in regard to it, but the final decision the parent.

Three of the maxims relate to recesses, physical exercise tilation. They are as follows: "Recess time should be play outside the school-room, unless during very stormy was this time rightly belongs to the pupils, they should not of it, except for some serious offence; and those who are it should not be allowed to spend it in study; and no ever be confined to the school-room during an entire seminimum of recess time should be fifteen minutes in each in Primary Schools there should be more than one recession.

"Physical exercise should be used in school, to prevent nervous and muscular fatigue and to relieve monotony, but not as muscular training. It should be practised by both teachers and children for at least five minutes in every hour not broken by recess, and should be timed' by music. In Primary Schools every half hour should be broken by exercise or singing.

"Ventilation should be amply provided for by other means than open windows; though these should be used, in addition to the special

means, during recess and exercise time."

Your rules and regulations are, for the most part, in harmony with the spirit of the maxims which I have quoted. One requirement, that in regard to the frequency of recesses in Primary Schools, has not been carried out. I would suggest whether it would not be wise to amend your rules in such a manner as to adopt this recommendation also.

The length of lessons and the proper method of instruction form the subject of another maxim. It is as follows: "Lessons should be scrupulously apportioned to the average capacity of the pupils; and in Primary Schools the slate should be used more, and books less, and instruction should be given as much as possible on the principles of

object teaching."

In regard to the lessons, special care is taken that they shall not exceed the limits laid down in this maxim. Your views on this subject are well understood by the teachers, and, as far as I have observed, are faithfully carried out. There is but little chance for an error of judgment on the part of the teacher, for the work of each term is carefully mapped out, and the limits of it definitely fixed. Nor is any teacher, even if she were so disposed, allowed to pass beyond these limits. Furthermore, it has been recommended to the teachers, that the work of each term should be arranged in such a manner, that the same amount of study may be required of the pupil each week. I have good reason to believe that this recommendation has been generally, if not universally followed.

With that part of the maxim which directs that in Primary Schools the slate should be used more, and books less, and instruction should be given as much as possible on the principles of "object teaching," our record is in perfect accord. Every Primary desk in the town is furnished with a slate, at the public expense. It is a part of the furniture of the room, just as the desks and the chairs are. In the use of this slate and the blackboard, the time of every Primary pupil is largely occupied. The variety of the exercises, by which the pupil is thus amused and instructed, is limited only by the ingenuity of the teacher. Printing, writing and drawing are the most prominent.

Thus the slate has superseded the book in the Primary Sch advantage of both the body and the mind of the pupil. I can hardly be said to use books at all in our Primary Sch only book which the child is allowed to use (apart from p story books) is the Reader. All the rest of the instruction is based upon the principles of "object teaching." The study in the Primary Schools covers a period of three year this entire period the child is required to purchase but the Hillard's First, Second and Third Readers. So much for the Schools. In the first year, in the Intermediate Schools. books are used: a Reader, dictionary and mental arithmetic second year a geography is added to this number. All the instruction is oral. And even in geography, such is the of the text-book, Miss Hall's "Our World," the instruction oral, and the exercises in it partake more of the nature of a tion than a recitation. Passing from the Intermediate to mar Schools, the general character of the instruction is pr an extent, although not so largely as I could wish. The br poorly taught is geography. This is not the fault of the te is due to the character of the text-book preserved. If the in preparation by Miss Hall, and soon to be published, shall adapted to our Grammar Schools as "Our World" has pr to be to our Intermediate Schools, we may, at no distant for happier results in this branch of study. I believe that t tion in the other branches taught in our Grammar Schools upon correct principles, and will compare favorably with t is given in kindred schools in neighboring towns and cities.

Another maxim directs that "the duration of daily a (including time given to recess and physical exercise) a exceed four and a half hours for the Primary Schools; six the other schools." Your rule upon this subject is as follow Primary, Intermediate, Grammar and Mixed Schools shall lo'clock, A. M., and close at 12 o'clock, M.; begin at 1½ o'cloc and close at four o'clock, P. M. No scholar shall be deta half-past four o'clock." It will be seen that the daily atte the Grammar, Intermediate and Mixed Schools is one half than the time prescribed in the maxim, while in the Primar it is one hour in excess of the time. I commend the subject consideration.

But one maxim remains to be considered. It relates to t of time that children should be required to study out of so reads as follows: "There should be no study required out of unless at High Schools; and this should not exceed one hou o study out of school is required in any grade below the Grammar, in the Grammar Schools, as far as I have been able to ascertain, not generally required. I am not aware of a single instance in th the aggregate of daily attendance in school, and study out of ol exceeds six hours, the limit prescribed in the maxim for daily idance in this grade of schools. There may be exceptional cases which the limit has been exceeded, but none such have been ght to my notice.

f the High School I can speak more positively. It must be borne aind that the organization of our High School is peculiar. In r schools of this grade the duration of daily attendance is either or six hours. In ours it is three hours. The first and second lish and College classes attend in the morning, and the third and th English classes and the third College class in the afternoon. hat practically there are two schools, one of which holds its sesin the morning, the other in the afternoon. Speaking of the intages of this plan in my last annual report, I used the following uage: "The 'half-day system,' which compels the attendance of pupil but one-half of each day, provided he has faithfully pered his duties, is not without its influence on the character, as it eases the habit of self-reliance, and cultivates a feeling of responty. He is entrusted with his time from day to day, and his sense onor forbids that he shall violate the trust. Another advantage nis system is its influence on the health of the pupils. During ime in which he is preparing his lessons, he escapes the necessary aint of the school-room, an atmosphere more or less vitiated in of every attempt to keep it pure, the interruptions occasioned ecesses and other causes, and the inevitable distraction of the l by the work that is going on around him. Still further: if a l is disposed to use his time judiciously, and is willing to spend rtion of his evenings with his books, he may devote a few hours ach day to manual labor, and thereby make himself useful to his nts, improve his physical condition, and prepare himself to perthe mental labor required of him with more relish and thorough-

It is also an economical plan. The present High School-house intended to accommodate ninety pupils. With this system it accommodate just twice that number. Hence it is to-day saving spenditure of from twenty to thirty thousand dollars, in the erecof a new High School building."

y faith in this system has been strengthened by another year's nal observation of its practical working, and by the testimony of of the citizens, whose children have enjoyed its advantages. one gentleman to me a few months since: "The 'half-day system' is of great advantage to me. My son learns his less evening and morning, and I have the benefit of his serv afternoon." Another remarked more recently: "My da improved in health almost from the day she entered the H Had not the 'half-day system' been in operation there, I for would have been obliged to forego the advantages of the Remarks of a similar nature might be quoted almost i Indeed, I have never heard an unfavorable criticism upon from any parent who has had an opportunity to judge this fact, then, be distinctly understood: that scholars are be in attendance at the High School only three hours in How much study is required out of school? Does the ag attendance in school and study out of school exceed seven day, the limit fixed by the medical faculty? It has alway custom to advise freely in regard to the health of pup acquaint myself with their mental and physical habits, circumstances would allow. But I have recently made a n investigation of the subject, feeling that a thorough ac with the facts was essential to intellectual judgment and a the result of this investigation, I find that in the classical d which is composed exclusively of young men who are fitting lege, the average time devoted to study out of school is hours. Adding the number of hours of attendance at scho an aggregate of seven hours per day. In the English department regard to which there is most cause for anxiety, as it is largely of young ladies, the average time devoted to st school is two and five-ninths hours. Adding the number attendance at school, we have an aggregate of five and hours per day, one and four-ninths hours less than the lim the medical faculty. I have given the average time. Tha ter may be thoroughly understood, let me add that the young lady in the school whose aggregate time of atter study, according to her own testimony, exceeds the limit fi eminent authority to which I have referred.

There is one other point that deserves notice in this conit is intimately connected with the subject we are consequently refer to the latitude that is allowed in regard to a choice It is left almost entirely in the hands of the parent, we enabled to limit the amount of mental exertion, as the plation of the child may demand.

Alluding to this fact in my first annual report, I made th statements in regard to it: "There are, in reality, for courses of study in the High School; the classical, the E

sh and French, and the English and Latin. Every pupil, with perpobation of his parents or guardian, may choose which of these ll pursue; and every pupil who shall have completed any one of is entitled to a diploma. There is also a three years' course, a diploma is awarded for the completion of this, in the same er as of the others. Still further, no pupil is compelled to pursury one of these regular courses of study. Parents can select studies as they prefer. A pupil may pursue only a single study. ch a case, his attendance at the school is required only during the of recitation. These modifications interfere in no manner with regular, systematic classification of the school, while, at the same they do much to meet the wants of those whom circumstances and from pursuing a regular course, or who wish to pursue a all course for a special purpose."

us we see that the advantages of our High School are open to Every citizen is free to avail himself of them in full or in part, cumstances or inclination may dictate. I am unable to see how an more carefully guard against the danger of overwork in this I, than you have already done by the rules that you have adopted a management.

perintendent of Schools.—THOMAS EMERSON.

# NORFOLK COUNTY.

#### BELLINGHAM.

ntilation.—Though we may compare favorably with other towns gard to the size, convenience and surroundings of our schools, yet there is one thing to which we would call the attention of two, namely, the ventilation of our school-rooms. Every schoolshould have a proper ventilator, so that air which is unfit for thing can escape, and good, pure air be introduced, without eting a few to the inconveniences necessarily arising from the at method of window and door ventilation. Go into any of our l-rooms after the school has been in session an hour and a half, ou would be astonished to find what an impure air your children reathing. Every one knows that an active, strong mind must good physical organization to sustain it; and how can we reason-

ably expect strength of body when we sap its very is way we treat our children?

Why is it that our teachers break down in teachin best fitted for their work? Is it because their emple or they are more careless than persons in other purso believe that if we had proper attention paid to the subject, our teachers would be more healthy, sch greater attractions, and one great source of mischief our children would be done away.

School Committee.—Coeleb Burnham, B. W. Woodbury, Rockwood, Ellis T. Norcross.

## BROOKLINE.

The Ungraded School.—The Ungraded School wa spring, by vote of the town, as a check upon irreg ance at the ordinary schools. It is unnecessary to mischief resulting both to the offender and to the from voluntary irregularity. The direct effects in the character, the encouragement to idleness and vice, damage to the community are obvious. They attracted the attention of the legislature, and stringe been again and again provided by the statutes of th for their suppression. These remedies, however, are what cumbrous in their application, and the pena be likely to be unwillingly inflicted and easily ev there remains a large part of the evil to which they reach. It is provided by these statutes that "ha "children not attending school, or without any re occupation, or growing up in ignorance,"-or, " wa the streets or public places of any city or town,"committed to a specified place of confinement. Stat. 1862, ch. 207; Stat. 1865, ch. 208.) What are "habitual" truants seems to be nowhere defined, er tion in the requirement that any child between the : shall attend school twelve weeks annually, of which be consecutive. Beyond this, those having the con seem to be at liberty to determine whether it shall not. Persistent irregularity of attendance during forty weeks of the school year, it would seem, may punishment by the allegation of the parent or guar seen fit to employ the child otherwise. Obviously to may be made use of with the greatest ease to nullif rce regular attendance. Moreover, the statute remedies, were more available, are directed mainly against flagrant cases of abondism, and though perhaps well enough fitted for the needs of ense city population, are too coarse and general to reach a class of s in which the evil, though of a rather different kind and less ing, is not less real, viz., the case of children who, from the remissor selfishness of their parents, are, although far within the express irements of the statutes, yet so habitually irregular in attendance o be of serious detriment to their schools. Among these are a ain number for whose constant irregularity there is more or less use,—but there can be no excuse for making others suffer for their t or their misfortune,—and no school can be what it should be se classes are liable to continual disorganization, and when the nple of irregularity from whatever cause is perpetual.

is of this class that the Ungraded School in a large part con-, and here they should remain so long as the disability or unwilness to comply with the proper school discipline continues. It is ossible, even were it desirable, to exclude them altogether; yet ought not to be made the means of depressing the general racter of the schools. And it was believed that upon this class of s the Ungraded School might exert pressure enough to cause e careful discrimination to be made by parents between sufficient

insufficient excuses for absence.

ruancy.—The subject of truancy has for several years annually aged the attention of the committee.

here is but little truancy outside of the Ward Schools, and it is cult to determine how much of the irregular attendance is by nission of the parents and how much is due to truancy. Parents alive to the importance of education will for very slight reasons in their children from school, and for yet slighter reasons yield to r wish to absent themselves. There has been a slight improvet in the average attendance in the Ward Schools for this year, pared with the last; taking the months of June, September and ober, we find for 1869 the average attendance was 85 5-43 per ., and for the same months for 1870 the average attendance was 9-24, a little over 3 per cent. higher. This improvement has lted from the establishment of an Ungraded School, and the loyment of one of the police officers as a truant officer. As these measures were adopted simultaneously, it is difficult to say what portion of the change is to be attributed to one, and how much to other.

is worthy of remark, that the employment of a truant officer was this year instituted for the first time; though his connection with the Ungraded School is a novel measure. However, we tioning the influence to each of two measures, we are result. We feel confident that by a faithful truant of means we have otherwise instituted and have recome though we can never hope to abolish, we may restrain a attendance. It might, perhaps, be pertinent here to remove the citizens who have children attending our schools, that rassment to teachers and great disadvantage to the which they are connected are occasioned by the pupils we or who leave school before the close of the session. The of our rules upon these points is strictly enjoined upon the

In order to render more effectual the means we have firregularity of attendance, we ask of the town to approcient salary to the truant officer on duty, that he may give attention to the charge of visiting schools and following This work has been done by police officer Gross, as faith ference with his regular police duties would allow. This be under the direction of the school committee.

School Committee.—Thomas Parsons, Chairman. George Brooks G. P. Wesselhoeft, S. Salisbury, J. E. Cabot, E. W. Sanford, W. Amory, Secretary.

### CANTON.

Evening Schools.-The wisest thing that has been town for the cause of popular education, was the five hi which it voted to expend at its last annual meeting Schools. It was a need which had been long felt, and this appropriation will be followed by others. There every community who desire to obtain an education, and afforded to them, and at such times as will be most them. It is not enough that we educate our childre young men and young women in our town who have opportunities of their childhood, or perhaps never had nities, who are anxious to obtain information, either ge some specific subject, and I trust that the time is not far the practical branches, the branches which will assist a r in earning his or her daily bread will be a part of the re tion in these Evening Schools. What these schools s what we trust they will be is, that a person desiring to tile or mechanical life, shall be thoroughly fitted, as far without experience can do so, in these Evening Scho apprentice system, when the young man lived in the employer, and worked at his trade for seven years, I ay with, and a youth now seldom learns more than a branch of a de, and if he wishes to become a master workman, he must get the ormation requisite to become so as best he may. Other countries e leading us in this matter. Skilled workmen from France and rmany are occupying the best positions in our workshops. If we sh to study mining we are obliged to go to Germany. Thus it is at every year our young men are going to Europe to acquire that actical instruction which they cannot obtain in this country. We e in a manufacturing town, and we should afford the young and the I mechanic every facility in our power for thoroughly mastering that rt of his business which can be taught from books. Again, we live a republic, and in order to carry out our theories of government ccessfully, we should have educated voters. The only danger that reatens us is ignorance,—that danger which prevents the successful mation of republics in France, Spain and Italy. It is important at every man should be able to read and write, in order that he may an intelligent voter. It is entirely owing to the want of intellince in our people that our elections have become so corrupt, and at men utterly unfit for office are placed over us as rulers.

Superintendent of Public Schools .- D. T. V. HUNTOOM.

### COHASSET.

The subject of compulsory education is more and more occupying e thought of philanthropists and statesmen. In Germany, which ring the past year has given such proofs of national vigor and wer, not only are all the citizens permitted to exercise the rights of se suffrage, and are liable to military duty, but they are required so to educate their children. No matter how poor or ignorant they sy be, or how much they need the services of their children, they e obliged by law to send them to school, and to have them instructed the elements of learning. The reasonableness of this requireent is apparent, when we consider that if all our children are to ercise the rights and privileges of citizens, they have a just claim an education which shall enable them to exercise the high trusts of izenship with intelligence. At the same time, the community have right to protect themselves from the danger, the burden and the ame of an ignorant and debased class of people. And the best otection is to be found in a good intellectual and moral education, ch as our Common Schools ought to afford. The Massachusetts stem of education will not be complete till it makes the education all the children in the State compulsory.

The question is often asked the school committee, "Wh tain children permitted to be absent from school, and to g idleness and ignorance, when we have a truant law, and trus to enforce the law?" It is true that we have a good truan truant officers who in many cases have done much to chec But the difficulty lies in the want of adequate power to en The parents of many of the children who are unr absent from school are unable to pay a fine, and if they co they have not enough control over their children to keep school. At the same time, if the courts before whom the might be brought should sentence them to confinement, t suitable place in the county where they could be confined. not, and should not be treated as criminals, and therefore sent to the Reform Schools. They cannot be confined in house nor in any other proper place in the county. The sentence of the court could not be executed. There is un of a State institution, or of an institution in each county, class of children may be sent and instructed till they are attend school regularly in their respective towns. Till su tions are provided, our truant laws will be, in many respe dead letter, and it will be impossible to secure the proper s of all children in our schools.

School Committee.—EDWARD TOWER, LEVI N. BATES, JOSEPH OSGOOD.

## DEDHAM.

The frequent absentee, from whatever cause, is a dead we his class; and where any considerable number are frequent the whole school is retarded and lowered in rank. It is to keep back the constant and diligent pupil, to favor the laggard. Yet in a graded, classified school the frequent must either be made of no account, or else the faithful must of their just rights. The better way is for the parents to children constantly while they do send them, even if they feet to remove them from school at an earlier age in consequence

Keeping so many out of school in the summer months, picking and other trifling matters, is robbery to the children prived and an injury to those who continue their attendance no accurate data of the extent of this evil in this town, but it is not less than ten or fifteen per cent. of the registered n the average, and in the summer months a good deal more. great waste of time, money and precious privilege. Accoreports, the whole State is suffering in this manner. In so

cities the per cent. of non-attendance is almost equal to that endance. We cannot call ourselves an educated people, nor of the glory and efficiency of our Public-School system, while facts remain. The compulsory system is broached as a possible y for this growing defect. In the Old World, in some countries, ople are complaining of the compulsion which deprives them of s and educational privileges, while here we are talking of the ity of compulsion to get people to accept of the privilege, free expense.

benefits to be derived are so great in themselves that all our is ought to claim and use them to the fullest extent, and thus ate human nature under the laws of freedom, as well as the mand righteousness of our school system. But it is certain we appreciate what we have. Our Public Schools are not put to full capacity of usefulness. Our children—that is, very many of are not accepting all the education that is freely provided for

th remains to be done before the full intention and design of ablic-School system will be realized. The children, it is assumed, to the State to be educated. The State undertakes to make itizens of them. It is bound to give them such education as alp them to gain a livelihood, and contribute something to the wealth. The better it fits and prepares them for this end the ill be its losses, through the diversions of vice, idleness and and the less will it be obliged to spend for prisons and houses rection. The State now spends more in consequence of crime auperism than for education. Seventy-five per cent. of our als are illiterate. If the State cannot remove temptation from its youth, it certainly ought to educate them so as to be able ist evil and escape its blight. The Public School indirectly es the greatest reformer we have.

irman.—George Hill.

# DOVER.

ns of Improvement.—As the result of abolishing the school is, and bringing all the schools under the direct control of the we have now one new school-house, pleasant and commodious, in the west part of the town, which for many years had been a needed, and where, being remote from other parts of the town, doubtless continue to be needed, at least for elementary and inary purposes. But it is to be hoped that the progressive

movement will not stop here, leaving the running of the so the same as before the districts were abolished.

Let the five schools, including the one in the south par ham, be brought into three locations,—the most conven directions,—and five-sixths of all the scholars will come mile of such locations; then three first-class Grammar-Scho can be employed, instead of being obliged to employ five and some of these third-rate teachers. By this plan the the would continue eight or nine months in the year, instead seven months for the five schools, for the same expense much better teachers.

Take another view: to run a school efficiently seven more year, that averages only eight pupils, incurs an expense thirty-five dollars for each scholar per annum. Now, diminist ber of schools so that the average shall be forty-five pupils and the expense for each scholar is less than nine dollar months' schooling, with the same teacher. The different about five hundred per cent., for the same length of schools are class teacher. This, as a business transaction, would have a great folly on the farm or in the workshop; yet we are same thing, year after year, in our school matters.

The State has done very much to open the way, in order the cause of education, and many localities have wisely averagely so these opportunities and means, and are doing not is now needed is that some plan be devised, whereby ever the State, so far as possible, be furnished with equal procommon-School education. The expense would be very so whole property of the State; probably an average of the mills per cent., wisely laid out, would accomplish a desire and make great improvement throughout the State.

Could an equal tax be made by the State on all the public educational purposes, and appropriated wisely, with to every part of the State, on condition that each town a provide suitable conveniences, the result might be highly such a plan would greatly facilitate improvement where much needed.

Or, could a small assessment of one mill or so, per cent. for appropriation where it is most needed, on certain cond would meet a pressing necessity, and open the way to prequal privileges at a common expense. Such measures no view appear to some as unjust, or as taking the attitude obut it should be remembered that public education is a public No State can afford to suffer any of its population to grow to the state of the state of the suffer any of its population to grow to the state of the suffer any of its population to grow to the state of the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer any of its population to grow to the suffer and

and vice,—and they generally go together. The present tenin New England, is to concentrate population, and especially
ty. Capital is invested where it will pay the best. Consey in this transition movement, many parts are left comparatively
te; and unless something is done to equalize the burden in
y that which is for common good, some places may sink into
sness and barbarism. Besides, these rural districts have been,
ny continue to be valuable tributaries to the largest and most
y cities and towns of the Commonwealth. Nearly one-half in
a country school,—and usually the better part,—will, if well
occupy important positions in the cities and business places of
entry.

not the part of justice and of wisdom, as well as the part of generosity, that the entire capital of the State should contribute ease the value of its own resources, and prevent an evil which otherwise become a public calamity?

n an influence would act as a mighty lever to raise the standard acation in many parts of the State, and develop resources in g improvements in many localities that would otherwise be ald.

erintendent.—A. E. BATTELLE.

### FOXBOROUGH.

ents do an irreparable wrong to their children when they keep from school simply on account of their own convenience. Defrom school one-fourth or one-half of the time, the school will reth but little to the children. They cannot keep up with their is, they can acquire no fixed habits of study, and probably will be no taste for it. Left behind by their mates they lose their spect and become discouraged. They are thus the subjects of any which will follow them in its disastrous effects as long as they

l is no wrong done to a school when a part of its pupils attend larly upon its exercises? The classes are hindered in their s by those absentees who are dragging along behind them. The er is disheartened; the whole school, too, suffers a demoralizing

Vacant seats remind the pupils who are present of those who loccupy them, and their minds become quite too familiar with hought that absence from school can be permitted. Besides, habits in one respect have a natural and close affinity to loose in other respects. The irregular attendant upon school is y far more troublesome to his teacher in other ways than is the

one whose place is never vacant. Interrupted in his stukept behind his class, he can have little enthusiasm in stude and idle, his hands are ever the more ready for mischie nothing which so promotes good order in school as pler and a constant enthusiasm in doing it. Is there no obligate part of parents to promote the good of their neighbors' well as their own, by cooperating with teachers and concorrecting the irregular attendance of pupils upon Public

But the wrong done has a wider reach; the town an suffer. The State assumes and correctly assumes, that it and preservation even can be secured only by educating and youth. Ignorance is in direct antagonism with free Hence this State makes the support of free schools oblig the towns. It also makes compulsory the attendance u of all the children between certain ages for a prescribed weeks during the year. Now a failure to comply with the of the law frustrates the beneficent end it seeks to secur serious injury is done to both town and Commonwealth in

Viewing the matter as thus presented, the committee had duty required them to correct the evils of irregular attens chool as far as lay in their power. They therefore adopted lations to which reference has been made.

Some complaint has been made of their action in exc school those whose irregular attendance was a source of so It has been said that those who could or would attend sch needed to go that little the more on this account, and ought not to be excluded. But sounder reasoning would a widely different conclusion. Those who attend school s so irregularly might as well not attend at all, for their secures little or no good to themselves, and it inflicts great others. The little good on the one side is more than l the evil on the other. It has been said also that the pupils from school in such a case is in conflict with the requires parents to send their children to school. But th which makes this requisition upon parents, requires also committee to exclude from school those children who do with certain conditions. A definite end is sought by the makes it the duty of the school committee to make such for the school as will best subserve that end. All the c youth in the State have a right to attend school, but the right so to attend school as to frustrate the great end for Public Schools were established.

School Committee.—N. S. DICKINSON, WM. H. THOMAS, MANLEY GROV. COMEY, JOSEPH E. POND, Jr.

### FRANKLIN.

ould earnestly recommend those scholars who design to teach lesirous of taking a high rank, to give more attention to this f special training before undertaking the arduous task of imnowledge to others. Where scholars do not have the adof a Training School connected with a High School or an , we cordially recommend a course at some one of our extate Normal Schools. Our experience from the employment al graduates in our schools has been decidedly favorable to ss of those schools in fitting scholars for teachers. We are ans disposed to deny that it is possible, without the immedif such schools, for persons to become first-class teachers. have seldom met with them except where, through some ney have acquired those methods and principles of teaching eveloped by those schools. And the teacher who, through nterest or ability, cannot bring these resources to his aid, we have mistaken his calling.

Committee .- George King, S. W. Squire, A. D. SARGEANT.

### MEDWAY.

cord of attendance in our schools the past year unmistakably more thoughtfulness on the part of parents upon this subject. The consequent low percentage of attendance heres been an evil in itself demanding reform; therefore it has purpose to employ every inducement to secure a daily attendench scholar. It has been enjoined upon the teachers to ind their pupils of its importance, and we have lost no oper of advising with parents upon the subject. At the commut of the spring term we promised the schools that a list of res, not absent or tardy during the year, should be incorpote the annual report.

ort put forth on the part of the children to secure a place list has been exceedingly gratifying; and no less so the exhibited by the very many parents. Often have they exposes the state of the purpose to aid in this much needed reform. Tarfar more needless than absence. The former denotes rather ghtless, inattentive child who loiters away his time on the hool; while the latter results from sickness, or some real or necessity on the part of the parent. The power to correct rests mainly with the parent. And the importance of so

doing relates not only to the prosperity of the school future success of the child, by early acquiring habit action. Many parents expressed regret at the close examination, that their children had been absent one or not during the year, and that because of sickness. The musuch interest is encouraging and indicates a higher a our schools.

Secretary.—CHAS. H. DEANS.

### MILTON.

At the last session of the legislature an Act was r drawing among the studies required to be taught in our F As this is an entirely new feature in the course of st sued, there has been some hesitation in introducing th committee having no precedents to show in what man system should be conducted. But it is hoped that arra be made so that instruction will commence with the ne more special teachers being employed for that purpose. ing that the art of drawing is to be recognized as one of which the scholars in our Public Schools are expected t For, besides the elevating influences of the art itself, the resulting to those even moderately accomplished in this be inestimable, especially to those engaged in the m manufacturing industries. And it should, therefore, be that we shall do absolute injustice to the children of the suffer them to go forth from our schools less accomplis of drawing than the children of the other towns of our Co

School Committee.—ELIJAH TUCKER, SAMUEL BABCOCK, EDWAI JASON THAYER, T. EDWIN RUGGLES, HORACE E. WARE.

#### NORFOLK.

The school committee, in discharge of their duty as law, respectfully submit their first annual report.

And first of all they are happy to congratulate the very commendable position it assumed at the outset of porate career, on the subject of popular education, as a liberal provision it made for the support and prosperity Schools. This is one proof, among others, that the new to its true welfare, and able and ready to take as good as had been taken of it while it remained in its former

e same wisdom and happy foresight inspire its counsels in the

there of children in town between the ages of five and fifteen, is on actual count to be 222. The number that have been in time for a longer or shorter period is about 200; from which it is that between the ages above specified, the names of twenty ee children in town do not appear on the register as having a school at all. It is hoped there existed a sufficient reason for on-attendance. It will be seen by referring to the table of ance, that all our schools with one exception, the Centre, are and so far as present indications go to show are destined to small for years to come. This is a misfortune. The fact not creases the cost of the education of the individual child, but the school without those incitements to effort so important to the both teacher and pupil. There lacks scope for that health-dry which is so great a spur to exertion.

weeks, divided into three terms of 10 weeks each, and all the have run that length of time, with the exception of the North, teacher was called "by the powers that be" to serve as juror, the school two weeks before its allotted term had expired. efficiency will be kept in mind, to be made up another year, hole school term, it will be seen, has given us an addition of eks to what had before been usual, that is, in the Wrentham the town, though the same as has been usual in the Franklin But even this is a shorter period than is usual in many towns, orter than is consistent with the highest success. A term of eks is of the most desirable length; and the committee would ta most valuable addition, if the school-year could be lengthened 33 weeks, giving us three terms of 11 weeks each, and beyond ey think the school-year could not be profitably extended.

attendance in the pleasanter season of the year is considerably than in the more rough season of winter; and the number ils attending in the latter season who did not attend in the is very few indeed. Do not these facts suggest the propriety gning the school-year to the more favorable seasons, and of thus ag the exposure and loss attendant on our cold and stormy a?

This is sure to be felt whatever its character in As a general rule the child will be in school, what it is at and bring its home training along with it. If governed at it will be easily governed at school; if encouraged to do well be, it will show it at school. In a word, the school must be

largely what home influences make it. Almost every disobedience or disorderly conduct the past year, is misdirected home training. It will be, in fact, impossible schools what they ought to be without parental cooperation such cooperation, it is hardly to be expected that the maintain due order and secure a successful working of made up as it is of so great a variety of individual char parents would have a profitable school and the please their children making progress in knowledge and all good they must look after them and insist on their doing must encourage them in attendance, in obedience, in so respect and in every moral excellence and right aspiration

School Committee .- J. K. BRAGG, LATHROP C. KEITH, JACOB F. POMI

# QUINCY.

Evening Schools.—To determine the number and locating Schools, your committee called a meeting of all desir the same, at the town house, and located one in the Ad in the Willard school-house.

We employed two male and two female teachers in First sessions held Oct. 31.

Paid for teaching, oil, lamps, and other incidental exp the special appropriation for these schools.

Thirty-five sessions of each school were held.

West School: whole number of pupils, 144; males, 13; average attendance, 77; youngest member, 12 years; ber, 40 years.

South School: whole number pupils, 80; males, 80; av ance, 53; youngest member, 14 years; oldest member, 3

The studies pursued were reading, writing, spelling geography and book-keeping. Evening sessions have attendance of day schools.

The teaching was made thoroughly practical. The determined the members has been uniformly good, and their progress

We believe these schools a decided success,—far above tations. We hope they may be continued and extended tions of the town, and that more females will attend. appropriation of \$1,000 for this purpose for the ensuing y

Chairman .- WILLIAM S. MORTON. Secretary .- ASA WELLINGTON.

## RANDOLPH.

committee desire to call attention to the need of having some officers. We have made complaints during the year against boys for truancy. In each case before the court, it was decided the boys on probation, and they have since shown that the best with them was taken. But another fact requires investigation tion by the next committee, who will need therein the aid of fficers. There are in the town, as shown by the returns of the nen to us, 1,384 children between the ages of five and fifteen in all the schools, as shown by the registers, about 1,100. are the others,—about one-fifth of the whole number? We they should be carefully looked up, and be compelled to attend . The committee have found that personal application by the rs or by themselves is the most effectual remedy for absences of ers of schools, and think that the same would secure the attendf a large part of the fifth of the town's children not members school. In this work is seen the need of the aid of two or discreet and active truant officers. Not that we think legal res should be resorted to, except in extreme cases, but a parent sually try to overcome any difficulty, if kindly encouraged by a who seems interested, but especially if that one is clothed with uthority.

ool Committee.—NATHANIEL HOWARD, JACOB WHITCOMB, W. E. JEWELL.

### SHARON.

gth of School year.—All our schools have been favored with me amount of schooling. Thirty-six weeks have been given to hools in three separate terms. These terms were arranged so afford as long a vacation during the summer months as would be nient for all concerned. We feel that as a town we have greatly yed in this regard since the adoption of the present system. It the former arrangement some of the schools were favored with the former arrangement some of the schools were favored with the school-year than others, but ever since the district system colished, equal privileges have been given to all of enjoying the amount of instruction in our various schools.

gations to Teachers.—There are some duties parents and guarowe to teachers. It has seemed to us during the past year that has been a fault, now and then noticed, that should be wholly ated. We refer to the spirit of unkind and unjust criticism consure passed upon teachers in such a way as to injure the teachers' influence, and arouse a spirit of dissatisfaction sadly detrimental to its highest good. We do not expeteacher will exactly suit every parent. This would retion everywhere. Neither do we desire parents to remwhen the best interests of our schools demand a hear only wish that the right method should be employed. your wants either privately to the superintendent or the committee, and the matter shall be examined.

Secretary.—Sanford Waters Billings.

## STOUGHTON.

Chromos.—The very liberal offer made by Mr. Lo Boston, to furnish his beautiful chromos for the Public discount of fifty per cent. from his usual retail rates committee to make an effort to secure some of them for We accordingly presented the matter to the scholars i schools, and asked for a small contribution from those posed to aid in the matter of adorning their rooms. A and liberal response was made. One hundred and nir were thus contributed, which the committee duplicated t tax"; thus making our canine friends, or rather their tribute to the æsthetic culture of our children. These tures, which some could not distinguish from oil pair fail to exert a refining and elevating effect upon the young. A love for the beautiful, both in nature and in be developed. And whatever tends to produce this re welcomed as an active and efficient helper in the great v

Drawing Books.—The legislature of last year passe 248, "so as to include drawing among the branches of l are required to be taught in the Public Schools." In act this requirement, the committee, after examination, at tholomew's System of Drawing Books"; and introduct the several schools of the "Intermediate" and "Granand to the older ones in the "Mixed" schools. Drawing also furnished to the Primary Schools. There has been the part of a few of the parents, an unreasonable prejudintroduction of this study. We are not responsible for the makers of the State have seen fit to require it, and we conformed to the statute. We have furnished the books law, and if any parent neglects or refuses to pay for

lected in the way provided for such cases. (See General Stathap. 38, sects. 30, 31.)

hod of Examination.—Owing to the fact that all the schools on the same day, it was obviously impossible for the committee sue the same method of examination as heretofore. We could sit all the nineteen schools at the same time. We therefore d another way, which is new to us, but which has long been ed in the schools of Boston and vicinity. By a division of we made a thorough personal inspection of the condition of chool during the last two weeks of the winter term. A series questions in arithmetic, and the same number in grammar repared for the examination of the highest classes in the Mixed cammar Schools; the other classes being examined orally. In g, the piece was selected by the committee, and all errors in ciation were noted; and in spelling, five words were given out a scholar. We thus obtained a very accurate knowledge of the condition of each school. We have a record of the percentage ect answers for all the schools, but did not deem it advisable lish them this year, as the system had not been pursued here

It would be desirable to have such full and precise examinaeld at the close of each term hereafter. This would not only comparative estimate of the schools, but enable the committee ermine very clearly the progress made from term to term.

veyance of Children.—It seems desirable that the town should ome action in reference to the conveying of children to and from blic Schools, when they reside at remote distances therefrom. ally should this be the case with those who attend the High from the outlying districts. By chapter 132, Laws of 1869, it nacted that "any town in this Commonwealth may raise by on or otherwise, and appropriate money to be expended by the committee in their discretion, in providing for the conveyance ils to and from the Public Schools." Of course any such promust be established on some general principle which would be able to all cases. It might be done by fixing some mileage for to live beyond a given distance from school. Those pupils rein East and North Stoughton, or elsewhere at a distance, might be enabled to avail themselves of the privileges of the High at the centre of the town.

ol Committee.—Thomas Wilson, Isaac Swan, C. Dyer, Jr.

## WALPOLE.

In nearly all our schools there are so many classes that can be given to each one. In some cases the teacher is hasten through the classes so rapidly that nothing more than simply to hear the answers to the questions. No tim for explanations such as should accompany every exercise instances teachers have four or five classes in geography, a in written arithmetic. As a general rule there should b · of each. We recommend the reduction of classes in thes that number. Teachers must have more time for recit more time for exercises where the judgment and observe pupil are necessarily enlisted. At present, our whole teaching is too mechanical. Thoroughness is not attain slavish adherence to text-books. We have no doubt t attention to terminations and constructions of words give observation to the mind, and disciplines it to think easily a but if the mind is kept in this channel alone, it is at the originality and independence. The mind should be trained of discrimination by requiring the pupil to mark the differen things around him,—which are constantly coming und observation in the world of Nature. There is many a one,

"Can trace a panting syllable through space,
O'er flood, through forest, field, and tangled park
Up to the Deluge, to the spacious ark,"

but who cannot discriminate an oak from an elm, a rose lia, a pickerel from a perch, or a pigeon from a hawk. work well, the mind must be engaged upon subjects in w not but feel interested; and if teachers can present su they will succeed in disciplining the child's mind without ing it or making study seem irksome.

Music and Drawing.—These branches of education as portant and almost indispensable in our Common Schools. of the first need hardly be considered, they are so apprefer more especially to vocal music. It is not only a reliusual routine of study, but it has an elevating influence, a to soften and humanize the coarse, rough places in on Moreover, it strengthens the vocal organs, and is an especial reading and speaking. "It is a noted fact," says jee, "that, when music is taught in our Public Schools,

lisappear from our streets. It directly aids in the discipline of while it calms and soothes the restlessness consequent upon lous study. It holds the highest rank as an aid to the memory. ongs of childhood are never forgotten. The powers of obserand expression are all heightened by it, and as a mental discipling nowise inferior to the vaunted study of mathematics." The is no one, it would seem, who is not able to see some good flowing from a continued practice of it in the school room.

re is no one, it would seem, who is not able to see some good flowing from a continued practice of it, in the school-room, as elsewhere. In virtue of its influence upon the soul it must and itself to all.

do not suppose there is need of recommending it to the favor person. Still, it is not taught as it should be in our schools. ne of them songs are not even sung, for the reason that the s are not singers. In order, therefore, to have vocal music in all our schools, we think it would be profitable to employ a teacher, at a moderate compensation, to visit them every term purpose of giving instruction in this important department. ssia, where they have the best system of education, perhaps, in rld, music occupies a very prominent place. Almost every one ed there is not only a good singer, but generally a good peron some musical instrument. So important is this branch of on coming to be regarded, that the Board of Education in ast report recommend that it be added to the list of studies d to be taught in our Public Schools. Seeing the great ades arising to the community from such a course,—as we should robably have ten singers where now we have one,—we must y second that recommendation.

espect to the second branch of education, that of drawing, and the legislature was passed last year, requiring schools in the owns and cities to study it. The Board of Education now sugge expediency of changing the statute so that its provisions may so all towns of over five thousand inhabitants. Of course, any containing a less number is at liberty to have it taught in its, if it shall so vote, or if the committee will take the trouble it introduced. In several of our schools, during the past has branch of study has been pursued with good success. We hat during the present year it will find its way into all our. Among the different systems, we like that of Bartholomew, and recommend it to parents and teachers as one calculated to be pupil along step by step, and, with faithfulness and application of the proficient in the art.

he Committee.-W. B. SMITH.

### WEST ROXBURY.

There is undoubtedly ample room still for improveme lic Schools. There is yet apparent too much of what prevalent in America,—the forcing or hot-house method—due in part to the unhealthy, feverish ambition and a are so obvious in every phase of our society, and in part time allowed for education. But we think there is a thealthier system, and that the time is not far distant we girl who exhibits signs of unnatural or precocious intellewill be regarded as needing treatment for cerebral disea as a genius whose brilliancy is to be increased by stim destruction the brain, already too active, and needing from intellectual exertion.

When this defect shall have been fully appreciated by Massachusetts, and a more rational and safe method su schools will then begin to produce the results which principle upon which they are founded ought to yield.

Although there may seem, at first glance, to be an in compelling the citizens of a free country to educate whether they will or no, in reality, such a requirement accordance with the true spirit of republican institution form of government, the prosperity and security of the largely upon the intelligence and virtue of the individual to becomes an imperative duty of the State to say to the have no right to allow your son or your daughter to grorance, and you shall not do it."

It is the duty of the State,—most certainly of a State suffrage prevails,—to see that the youth upon whom it to rest the responsibility of its government, are proposed that responsibility, and sufficiently educated to en make an intelligent use of their privileges and rights. of our jails and prisons show beyond question that crance almost always go hand in hand. In the Ohio p 276 inmates, nearly all were reported to be ignorant, a of them unable to read or write; and in Auburn priso only 39 out of 244 inmates could read and write. The sion cannot be avoided that our Public Schools are resafeguard by which the State is to protect itself again pauperism.

Drawing.—In accordance with the law passed by the 1870, drawing has been introduced during the past

and Grammar Schools. We regard this as one of the most ant steps taken for many years in the laws regulating education seachusetts. Intelligent observers familiar with the comparskill of different nations in the industrial arts, have long been that, while Americans are second to none in inventive ability, the application of scientific laws and methods to practical uses, re far behind many European nations in all matters where nicety to or beauty of design are called into requisition. This defect articularly noticeable in the Paris Exposition in 1867, where an unity was afforded to compare with each other the best works the nations having any claims to be considered as civilized, in dustrial and practical arts, in textile fabrics, in machinery and in the arts.

rough it was claimed, and probably with truth, that America ot fairly represented at the Exposition, it was very apparent e were greatly inferior to many countries in all manufactures in beauty is an element. And the reason was, that in Prussia, m and France,—the countries most conspicuous for the elegance ste displayed by their artisans as well as their artists,—drawing hight as regularly, and quite as much a matter of course, as g or arithmetic, and thus a perception of the beautiful in form design was developed, and a skill in representing that perceptained, which became apparent in all their work. Even England, had considered herself the model and type of a manufacturing , was forced to concede her inferiority, and has established s for the express purpose of teaching drawing, both free-hand echanical, in Public Schools. Thoughtful Americans also saw portance of this branch, and have labored diligently until they acceeded in having drawing taught in our Public Schools.

not alone or chiefly on account of its mere utility is the teachf drawing to be encouraged. Thousands, who probably will make use of it in any industrial pursuit, will be grateful that have the opportunity given them to develop and strengthen ove for whatever is beautiful in art and in nature.

s curious to observe with what interest nearly all the pupils in hools where drawing has been introduced began its study. It soon to judge whether the results will be all that were expected, ere is no reason to doubt that much benefit will be derived from aportant branch of study.

ool Committee.—James W. Rollins, Chairman. D. S. Smallet, Secretary. Eliab thorpe, John M. Ordway, Thomas Magennis, John W. McKim, Edward S. c, C. H. Sewall.

## WEYMOUTH.

Truancy.—From the return of the assessors made to tee, it appears that on the first day of May last, there we hundred and three persons between the ages of five and residing in the town of Weymouth; at least two hundred not attend school as required by law. We believe that ment of the accompanying by-laws would tend to diminisher of those who have thus failed to comply with the State.

By-Laws on Truancy, adopted by the Town of Weymouth, and approve of the Supreme Judicial Court of Massachusetts.

SECTION 1. Every person having under his control a child betty of eight and fourteen years, residing in the town of Weymouth, a during the continuance of his control send such child to some Pulsaid town, at least twelve weeks, six weeks of which shall be confor every neglect of such duty the party offending shall forfeit to town a sum not exceeding twenty dollars; but if it appears upon the truant officers or school committee of the town, or upon the trial ecution, that the party so neglecting was not able by reason of posuch child to school, or that such child has been otherwise furnismeans of education for a like period of time, or has already acquired of learning taught in such schools, or that his bodily or mental cond such as to prevent his attendance at school or application to study required, the penalty before mentioned shall not be incurred.

SECT. 2. Teachers having charge of pupils who are habitually report in writing their names, the number of times absent with the same, and the names of their parents or guardians, to the committee tendent of the town, and it shall be the duty of either the committee tendent to investigate cases so reported, and if in their judgment deemed necessary, they shall report the same to the truant office prosecute such offenders. The party convicted of truancy under shall forfeit to the use of the town a sum not exceeding five dollars and a sum not less than five or more than ten dollars for each subsection.

SECT. 3. Any minor convicted under either of the preceding sat the discretion of the justice having jurisdiction of the case, i fines mentioned in said sections, be committed to any such institution, house of reformation, almshouse, or other suitable situation the purpose, for such time, not exceeding two years, as such justice mine.

SECT. 4. A minor convicted of either of the offences mentioned laws, and sentenced to pay a fine, may, in default of payment, be such institution of instruction, house of reformation, almshouse or oplace, provided as aforesaid.

c. 5. Any trial justice shall have jurisdiction of complaints, made under ceding sections. All warrants issued upon such complaints shall be made able before said justice at the place named in the warrants.

r. 6. The town shall appoint at the annual meeting four of the constatute town as truant officers, who alone shall be authorized, in case of on of the preceding by-laws, to make the complaint and carry into execute judgment thereon.

perintendent.—Your committee recommend the employment of crintendent of schools.

believe that with a superintendent, a greater uniformity and a classification in the schools can be secured than in any other. No matter what the ability or how wise the plans of the compart, if the execution of those plans is intrusted to thirty or forty are, without the guidance of one controlling mind, confusion and tency may result.

s can hardly be over-estimated.

committee that can be appointed in this town will be able to do t ought to be done for the schools. Educated and intelligent only can perform this work properly. A great amount and y of labor is required,—such as personally examining teachers holars for promotion from one school or grade to another; visitne schools and giving directions; making rules for the school; g difficulties that are continually arising between teachers and rs, parents and others; the charge and care of the school propthe examination of schools at their close; the making of returns, s, etc. Such members of the committee as are qualified to do s, are generally fully occupied with their own affairs, and soon ne labor necessary to a conscientious discharge of their duties, a r draft upon their time than they can afford. The burden and ance of the office occasion frequent changes. Committees usually up the work, assigning to each a special field of labor, and conitly no one member of the board has such knowledge of the s as will enable him to form a just estimate of them, or to stand the wants of all. Committees do not make a specialty of tion, and have other duties that occupy their time.

work needs a man well acquainted with school systems,—one e of advising both teacher and committee, one perfectly familiar all the branches taught in our schools, and one who shall devote time and ability to the work. It is believed that such a superlent can perform the work vastly better than any committee of a do it, and that as a matter of economy simply, it is cheaper to

employ such an one and pay him liberally, than to pay tee's bills for what they do, even though they do a large work without charge, as has been the case during the past

The committee are perfectly satisfied that there oug much of this kind of work done as any one man can do, h qualified he may be; that no committee of six can do it could, would or could afford to do it as cheaply as it could one man, and that in proportion as any part of this work the schools must suffer, and consequently a portion of the tion wasted.

School Committee.—J. W. LOUD, A. A. ELLSWORTH, G. W. FAY, ABN C. C. TOWER, C. Q. TIRRILL.

# PLYMOUTH COUNTY.

### ABINGTON.

We rank geography among the important studies of the School course, and assign to it sufficient time for pupils knowledge of what are termed the essentials of the b study of geography should be reduced to a science, and should exercise the varied powers of the mind and contril growth. We should first consider the outside of the eartl to the minds of the pupils interesting facts about home, where they reside; pointing out the streets, fields, hills, va and such other objects of interest as may occur to the tes drill is intended to give the pupil correct views of the n objects that are seen on every hand, and the terms that d Here the observing faculties, so full of activity in the child for development. It is through representative objects the lessons are to be taught. If the globe is used to illustrate contour of the earth, the location of mountains, oceans, riv lakes, cities, &c., it should create in the pupil's mind a life or image of the earth as it really exists. This gives sig the form and nature of our planet. The geographical typ a meaning, and all the physical regions are so many rea studied, appreciated and made a source of knowledge. should begin with the first lessons and be continued course. The teaching should be practical, and no time spen ne mind with facts and figures which will never be recalled. nethod of teaching this branch by well arranged topics has our val. This method requires careful preparation on the part of ers, as no one can conduct a recitation creditably, without a good standing of all the relations of the subject. If pupils are allowed bress ideas in their own language, a more thorough and valuable ledge of the lesson is secured. Thus taught, it becomes a science eat value; for how can it be regarded otherwise, when we note how beautiful is this earth of ours,—an earth so grand in all additions, the home of so many different peoples and such varied of animal life!

ow shall we teach history?" is a question frequently asked, even r best teachers. We have often remarked a lack of interest in addy, and felt a deep regret that a branch so full of valuable ction should be regarded with so much indifference. We would mend the topic method of teaching history, as the best, so far as oservation has extended. Interesting facts clothed in the pupil's age, and narrated in the order of the occurrence of the events to a they relate, make a more acceptable recitation than nicely add answers to formal questions. Taught in this manner it enlarges ange of thought, improves the taste and greatly strengthens the all forces.

e need in all departments more oral instruction, better illustration, general explanation. All teaching should be characterized by less of understanding, breadth and variety of knowledge. This include effective instruction in regard to civil and social obliga-

Where, if not in our Public Schools, are large numbers of our to be qualified for the faithful performance of the duties which good citizen owes to the community in which he resides, and government that affords him protection?

cool Committee.—James H. Gleason, Benj. F. Hastings, Charles W. Soule.

## BRIDGEWATER.

chers' meetings have contributed more to the improvement of chools than any other one thing. These meetings were comed at the beginning of the year at the request of the committee, ave been held regularly in the High-School room, on the second day of each month. The attendance of teachers has been good; mmittee have all been present at each meeting, with a single tion, and parents and friends have been present to some extent. xercises have consisted of reading of the essays by the teachers; sions by the teachers and committee; teaching exercises, in

which the teacher has, by the aid of her class, illustrated left teaching a given subject; and Messrs. Boyden of B Harrington of New Bedford, and Merserve of North B have favored us with valuable addresses. The subjects exercises have been confined to school work.

The teachers have grown individually by reading, spethinking about the subjects which they were to present schools have been benefited by the increased knowledge siasm of the teacher. These meetings have been of no the town. The committee have given their time, and with ers have defrayed the expenses which have arisen from spother causes. Hundreds of dollars could not express the meetings have been to the schools.

Teachers' Library.—Ministers, lawyers, physicians, bu and mechanics find it essential to their highest success t biographies and maxims of those who have risen to eminer profession. The true teacher must study the principles and the biographies of those who have successfully ap principles. The time is fast passing in which every one how to read, write, cipher and whip can pass as a success Many of our teachers desire to read such books, but have to them. Many do not receive sufficient pay to purchase educational works. The highest interests in our schools teachers to read them; consequently, the wise course for seems to be to allow the committee to use a part of the funds of this year—say forty dollars—for the purchase of o ing matter upon subjects pertaining to school instruction pline; these books to be kept in the High-School library, to teachers according to such rules and regulations as the may adopt. Just criticism and a good library will be stro ments for live teachers to come to Bridgewater.

School Committee.—PHILANDER LEACH, JOHN A. LOTHBOP, ALBERT E.

#### EAST BRIDGEWATER.

Employment of Teachers.—Every year we are subject loss of one or more good teachers, who are drawn from liberal offers of other towns. The highest pay received by of any school below the grade of High, is but three hundred teen dollars, while most of them receive but two hundred and some less than that. Other towns offer them five hundred for the same work, and as a matter of course, they ask to from their engagements that they may accept such liberal of

n our manufacturing shops earn more than the teachers in our s, yet it costs the latter time, money, hard work and often ation, to fit themselves for the performance of that which is a hard, and too often a thankless task.

pay more to those who hew their wood and draw their water, of those who instruct their children. This is not right nor even ble. We cannot afford to lose our best teachers each year; we afford to incur the risk of constantly employing strangers. we must employ a poorer grade of teachers, shorten our school-r increase our appropriation for schools. The first course we would be objectionable to all parents who have the welfare of hildren at heart. It remains then to choose between the two tives,—more money or shorter school terms. We ought to e our appropriation five hundred dollars to maintain our schools they now are. While this may slightly increase the rate of m, let us not forget that an ignorant, unthinking population is st grievous tax ever imposed upon a town, county or State.

ol Committee.—G. A. Wheeler, E. W. Nutter, William Allen.

### HALIFAX.

believe in good schools; that there is no comparison between and a good school. The only way to have good schools is to ood teachers, and to obtain and retain them we must pay the his hire. During the past year the committee have employed teachers from the Normal School. This school is especially ed for the education and training of teachers for the Public s. It has all the prestige, power and ability of a State insti-All the best and approved modes of instruction are there and taught. True, there have been some teachers who have ended the Normal Schools, and yet have proved excellent s and met with signal success, and such teachers we have d to engage and retain; but when we look back upon the schools taught in years past by those who were not Normal and which proved to be almost failures, and compare them ose taught by Normal graduates, which have all proved suchow can we help coming to the conclusion, which reason naturally suggest, that some special preparation, by way of g and training, is necessary to qualify teachers for schools, as to prepare persons to prosecute other occupations with satisand success? We readily recognize the fact that to follow any ment or trade in life with ability and prosperity, an individual eve some training for that employment. How then can it be expected that the untrained, uneducated teacher can calling exceeded by none in importance and interest a bility,—that of teaching the youthful mind?

School Committee.—Ira L. Sturtevant, Cordelia J. Richmond, N ton.

## HANOVER.

We have given each child in town an opportunity to resix weeks of schooling. We have also been able to revices of tried and faithful teachers by a slight increase of paix weeks, divided into three terms of twelve weeks excan be deemed a single week too many. Even with this do not surpass some of the towns around us. And the the ensuing year may find it essential to the welfare of so retain in it some teacher by a slight increase in the stiper neither of these things, to say the least, will the schools be injured.

Drawing.—By a statute of the Commonwealth this to as all others, is now required to teach drawing as a bran mon-School education. It is put upon the same basis by arithmetic, grammar or geography. We deem this a win Instruction in drawing, though meagre, will train both ha will be an endless source of interest to scholars, young assist all in learning to write, will be of advantage to a monstration of mathematical and philosophical problems that during the coming year drawing may be introduced schools of the town. But it can be done only in a simpl tending way. We cannot hire, at least unless the town thority, a drawing-master. Our teachers, except in ra are unprepared themselves to teach it. So the school co be compelled to limit its teaching to its simplest elemen they can do in this particular they will gladly do. The they will receive support and encouragement from the undertaking.

We are pleased to add that several of the most efficience received the training which has fitted them for their work School. The value of this school is made evident in this ways as well. Were those of our young ladies hoping to pelled to go out of town to get the needed training, either not become teachers, because not able to bear the expension of temptations incident to boarding-school life, would be

arge sums of money out of town, or would be lost to us by going ther and better paying towns to teach.

cool Committee.—Andrew Read, Jedediah Dwelley, Edward A. Perry.

## HINGHAM.

s no special disparagement to our present system of instruction that it is too textual, for this has been one of the chief faults of ucational systems. The book has always been put before the , flexible mind; and thus many vigorous intellects made to suffer se of the failure to adapt themselves to the hard, unelastic ods of the text-book. Manuals of study are but guide-boards ting the intellectual road along which young minds are to travel; s a file of soldiers, but with that freedom of action natural to mind's individual constitution. In the primary studies of lan-or the sciences, the text-books generally furnish the best ods; the solid, conscientious memorizing of rules being the first ite to success. But in such studies as arithmetic, English gramgeography and history, there is scarcely any teacher who canom personal knowledge of the mental peculiarities of the pupils, ve upon the best text-books that can be written; and the come are glad to see that, to a great extent, the teachers share this ction. Education is not accumulation, but growth; and parents are disposed to complain of their children's slow progress (as , from a superficial knowledge of facts, do), should remember advancement is not necessarily indicated by the pupil's having ed a certain page in the "Third Reader," or a particular rule in netic, but by their enlarged ability to read well from any book, culate correctly under any circumstances.

tendance.—The lack of the proper attendance of scholars is the ic disease at the vitals of the school system. Possibly during ast year this complaint may not have been as virulent as in forcears, but there is in every school a migratory class, whose seats all and empty during alternate days, weeks or months, as the may be. These scholars remain away long enough to forget all studies, and acquire numerous objectionable accomplishments, to become contaminators of the moral atmosphere of the school
Parents who keep their children from school for the most il reasons, are disposed to blame the teachers for all deficiencies colarship. This is as unkind as it is unreasonable. What chiland parents need alike, is a fuller realization of their legal as as moral obligations in this matter. We should strive to remember the school system is not a private convenience, but a public

necessity; and, when children are kept from school, the as the child is robbed of its best wealth.

School Committee.-John Snyder, Henry Siders, Peter Hersey.

### KINGSTON.

No branch of education is more practical and imports of government. We know that good order is generally was contributing to success in the literary exercises. But as much an end itself as it is a means to an end. It is scaffolding, but an essential part of the very edifice of the weare to train the children to be patriotic and orderly of republic. We are to teach them the lessons and laws of the weare to permeate their entire natures with renovating ing influences. If they are self-willed and selfish, passion bedient when they come to us, we are to strive to make scientious and true, loving and gentle before they less teacher should seek all this without the aid of the pare course he will achieve the end far more easily and effectuated. Government and moral discipline are as much a legitimate business as is the teaching of reading, spelling metic.

There are three kinds of government, both in the fa school: the first, where the children do pretty much a and almost invariably do wrong; the second, where the their parents and teachers require or allow; and the they do as they please and always do right. The first na chy. It is Bedlam let loose. It is no government at all. is the government of external authority and force; whi the true self-government, implying the perfection of the c Now you will find many schools, alternately under the first kinds of government, according to the personal power or l of the successive teachers. That the third kind of go possible and is not wholly Utopian, is manifest, since th dren who are docile and well behaved, whoever are th Let these exceptions be made the general rule and we a failures from insubordination and disorder, nor will there for resorting to those punishments which in themselves a sive. It will be seen, therefore, that the government a much to do with the government at school.

No expense, whether of time or money, for real education wasted. Where a people are too poor to support school find that their very poverty has been induced by their ig

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It was stated in a speech in Congress upon the bill for promotational education by Hon. Mr. Hoar of Massachusetts, that the ience of the past fifteen years has shown that the Commonda system of Prussia has revolutionized the manufacturing interest of the world; and England, at the very last session of Parant, passed a law to establish a system of universal education as sary to the regaining of her manufacturing supremacy. Mr. tone has recently declared that the victory of Germany over the is the victory of the Common-School system of Prussia over morance of the French Empire. We well know that in our own to intestine struggle, the more general intelligence among the armies did as much to procure us the final victory as did our ior numbers. Let, therefore, our system of public instruction be ned at any cost.

e older persons, who remember to have seen a Spanish dollar, its two pillars representing the two mountains on the opposite the Strait of Gibraltar, called the pillars of Hercules, may not aware that before the discovery of America and its mines of ous metals, the motto over the pillars was, ne plus ultra—nothing beyond. By the adventurous energy of Columbus, that stereodeclaration of ages was proved a lie. There is no such forbid-barrier to discovery and progress in knowledge. There are no sof past and present attainments over which is inscribed, Thus ou may go and no farther. Each succeeding year opens new tunities.

perintendent of Schools.—JOSEPH PECKHAM.

### LAKEVILLE.

prise, by the amount of money he is willing to invest in it, and mount of personal attention he is willing to bestow upon it. as to personal attention, where is the father of a Lakeville school regirl that can come forward and claim the merit of ever having deany of our Public Schools, except, perhaps, as an official? The amount of money appropriated seems to be more generous, but that has been found to be entirely insufficient to enable the compet to supply any of our schools with teachers that have been ed with a professional training at either of our Normal institutions which were established and are supported at the public use, for the express purpose of furnishing teachers for the Public ols. Now, if it is good policy for the State to educate teachers

is fair to judge of the interest a man feels in the success of any

at our expense, it would seem to be very bad policy for ourselves in a condition to employ them.

If we are to succeed in maintaining a respectable pothe towns of this Commonwealth; if we are to succeed children such an education as shall enable them to comfully and upon equal footing with others in the battle must we change our entire policy in regard to admisschool system. It is, beyond the question of a reasonab most ridiculous absurdity for us to maintain eleven sclaccommodation of our two hundred scholars, when a less more than one-half, would do the work much more effect

For the Committee .- M. HASKINS.

### MARSHFIELD.

Arithmetic might be taught in a more practical man present. One pile of wood, one stick of timber, or one actually measured by the pupil, and the results wrought transaction at the store, with the change made and the written by the pupil, is worth a score of abstract example never meets with out of the text-book.

A word to parents. We have spoken of your cordial r teachers. We bespeak their continuance. A teacher i much charity and consideration. The routine of duties her. She must act with promptness and decision. A te expect from a pupil a respect and confidence which is of ated by his parents. Truthful children often innocen imperfect report of the particulars of a personal difficult such circumstances, a private conference with the teach safeguard against further complaint.

School Committee .- MIRA J. CROSSLEY, E. ALDEN, Jr., SARAH E. LEC

### MIDDLEBOROUGH.

Truancy and Irregular Attendance.—The great bar to in our schools towards universal education is irregular For years, in almost every report, attention has been of great evil. Able essays have been written by eminent in published in educational journals. Legislatures have trie vain, to check its growth. Notwithstanding this, the sch present altogether too dark a record. Scholars are matreets and even found at their homes, whose places and even found at their homes, whose places are

chool-room. Last year 31 per cent., or \$2,139 of the school y raised by this town, was lost by actual non-attendance, not to on the serious drawback to those who were faithful to their s. This year presents a record but little better. looking over the report of the Secretary of the Board of Educawe find the evil to be general and wide-spread. re, What can be the cause, and what the remedy? Says one, much money is raised. Massachusetts stands second to but one in the Union, in the amount of her school expenditure per ar, it being \$16.45." If that be true, we might reasonably expect roportion of attendance to be very large comparatively in North ina, where the expenditure is but forty-three cents per scholar. ve find the facts are in favor of the old Bay State. Says another, s in part attributable to bad roads and weather, and the distance children reside from school." Let us look to some of the counof Europe. In Germany, that land of learned men, as well as at soldiers, we find by reports that non-attendance is not tolerand education may be said to be almost universal. In Sweden, e seventy thousand children travel daily over two miles, and ty thousand over four miles to school, the attendance is regular onstant, and 97 per cent. of the children are at present receiving l instruction, and a Swede who could not write his name and his language with ease, would be looked upon with pity and sity. We would remark, that in Sweden the vote of the pastor s equal to half the parishioners in the appointment of the teach-And in Norway, the dean, according to the law, must be chairof the school board. Other countries might be cited, the result nose educational systems we should find would compare favorably ours. It may be said, as these countries are not republics, edun is compulsory. Must we admit this to be the solution of the ulty? Do not the yeomanry of New England attach as much rtance to the educational interests of their own children, and will not make as great or even greater sacrifices for their mental evement, as kings and autocrats will for those of their subjects

dool Committee.—Elbridge Cushnan, A. H. Soule, E. W. Drake.

### PLYMOUTH.

awing.—I believe it would be a great public benefit, if some gement could be made by which this delightful and universally I study could be introduced into our Public Schools. Our neement in the industrial arts is so dependent on the general

lependents?

diffusion of skill in the various kinds of drawing, that i that a general interest in it is yet to be created. In all tinguished for mechanical skill and varied manufactur design are in the highest state of advancement. As m the life of our State, there is no part of the country eye and hand is more needed, or where it should be be On leaving our High School, I obestve that almost all I difficulty in getting employment that suits them. The to devote themselves to the lower forms of mechanical their education has not especially fitted them for the seems to be nothing left but to cast themselves into the trade, as soon as an opportunity offers. If drawing v lished part of our course of public instruction, opportun given for the development of talents which are now which, if discovered, would indicate the way the po take to arrive at fortune. The art is equally advanta and boys. The possession of skill in delineation wor possibilities of employment to women, which, without not within their reach. To give the art of drawing which the interest of the State demands, it will dou rendered obligatory, either by law or custom, on all the Commonwealth to make this art a part of the instru Public Schools. In order to do this, instruction must in all the Normal Schools, and from there it will be car Primary School in the State.

For the Committee.—CHARLES BURTON.

### SCITUATE.

It is the natural desire of parents to have their between the tender ages of five and ten, crammed with edge their little minds are capable of receiving. But to For, as their little muscles become tired by excess of delicate organ the brain becomes wearied and diseased. Then follows physical debility, thus rendering the children contend with the many diseases incident to childhood, have reached that age when they should appreciate that an education, they are either disgusted with books, or to unequal to the task of grasping the subject.

If the time and attention now required for the child could be devoted to the pupil of ten, the fruits of the would be tenfold, and both would be benefited, for the would in due time come to his studies fresh and prep ise parent will hesitate to send his child to school before he is t seven years of age.

ways appears to me when I visit a school-room, and see there ed babies who can scarcely talk, as though their parents ed it rather as a common nursery, where they can send their en and be rid of them for a time, than as a room for imparting ceiving instruction.

erintendent.—F. T. VINAL.

### SOUTH SCITUATE.

ool committees are often applied to by very young and often qualified girls, and by their parents for situations, but we advise such parents as have the means to be sure and send laughters, and their sons too, who design to teach as a profeso the Normal Schools, considering not merely their present but uture employment. This is the dictate of even economy, and sire for large compensation. The demand for Normal graduates gether beyond the supply, and is likely to be for a long time to and they usually command much better wages than most other rs. It should be considered too, that every year higher qualias are being required of teachers, and whoever takes any wise it of the future, in this respect, should qualify herself to meet nands, getting in youth the best possible education and train-Parents whose children are evidently adapted to teaching, and ish to devote themselves to it for life, or till they marry, had give them their patrimony now in a Normal-School education, n money, in future years—thus helping them to help themselves, secure all needed prosperity by their own efforts. course, all young ladies who wish to teach cannot get a Normal-

education, though here too, "where there is a will, there is be a way"; but rather than to be poorly qualified and so be rdinary teachers and thus always troubled to get situations od pay, they had better fit themselves to excel in some other ion costing less outlay of money. If young women and young nly knew what a surplus there is, in all callings, of only moderqualified persons, and what a deficiency of those who are suand how speedily the latter are all employed, they would no exert themselves much more than they generally do to prepare elves for the best situations. Taking into the estimate twenty and more rather than five, no young person can afford to enter is life-calling only half prepared for it; and it is being "penny

wise and pound foolish" for men who have ample mes from their sons and daughters the education they need

It should be seriously considered that the primar schools is not to give remunerative employment to however needy and meritorious they may be, but children sent to them-to educate them by the instru ence of the most competent and accomplished teach obtained. Still, there are open places for many your yet qualified to teach our mixed and difficult schools, try the experiment of teaching and perhaps meet with Graded Schools are the best for them to commend assistants or in sole charge; or schools from which mo and more advanced pupils have been taken by the Hig yet the fact should not be overlooked by parents youngest children they send to school, as much need a aud competent teacher as their oldest ones do; for ". is bent the tree is inclined"; and the simple ability t mentary branches of our Common-School education is being a sufficient qualification for a teacher of childre better afford the luxury of a cultivated and accomplis as a teacher of their little ones just beginning to att they can afford any other luxury whatever. The ri such teachers for their Private Schools, with the results, and all our towns should secure as many of t All young ladies too desiring to be teachers, should ones-superior persons and instructors both.

School Committee .- W. H. FISH, JAMES SOUTHWORTH, LUCY TUE

### WAREHAM.

When schools are suffered to labor through the yes sympathy or encouragement from the community, we expected as the result of their indifference but abate guid effort, in place of the emphatic purpose and which should always prevail in the school-room!

There is too great a tendency on the part of pare suspicion upon teachers, and to take sides against trivial charges of their children. Instead of this, the our schools need and they generally deserve, the dence and support of those for whom they labor. tion ought always to be in favor of the teachers; as investigation should be made, before deciding against they may pursue in conducting their schools.

e importance of this, and of cooperating with the teacher, respect to the education and government of the school. It is y securing a harmonious and well-ordered school, through each that the greatest advantages can be secured to the pupils.

ely parents should be awake to the educational interests of their en, and act with the same wisdom in reference to their educaeat they manifest in other matters in which they take a deep et.

ool Committee.—Ezra C. Brett, Benj. Fearing.

### WEST BRIDGEWATER.

a recent session of the legislature an Act was passed, amending at section of chapter thirty-eight of the General Statutes, "so nelude drawing among the branches of learning which are by action required to be taught in the Public Schools." In section I of this Act, all towns having more than ten thousand inhabitare required to "make provision for giving free instruction in rial or mechanical drawing to persons over fifteen years of age, in day or evening schools." In doing this, the legislature and the views of the Board of Education, expressed by them in a directly relating to the advantages of general instruction in ang in the schools of the Commonwealth.

arge towns, where schools are well graded and the classes well ged, the success attending instruction in any department must necessity more complete than in towns more thinly populated, schools of a mixed character. But there seems to be no reason lrawing should not be taught with good success in many, if not our schools. Aside from the artistic talent and love of art regular instruction in this branch would develop, is the immeand practical advantage of a well trained eye and hand to the of the community. An accurate and thorough knowledge of ng, the ability to express correctly real forms, is an invaluable all mechanical arts.

e first requisite to the successful introduction of drawing is the val and support of the parents; and we can only prove by actual iment how far it will become a practical success in our ungraded perfectly graded schools.

e public generally demand of teachers "interesting" schools and resting" examinations, and gradually teachers in acceding to demands fail to recognize the higher demand of absolute right. ever faithfully the teacher may drill pupils in writing or spelling, esults of his labors are neither specially attractive nor evident to

the superficial observer. And yet what two branches School education are of greater importance? A legible handwriting and perfect orthography, are acquisition as rare; and acquisitions which should be placed within every scholar, and placed in such attractive and happevery scholar shall be enthusiastic to gain these prizes of persevering labor.

Foremost among the Common-School studies taughter practical success, may be placed English grammar and So long as the majority of girls and boys "hate" gramma safely inferred that the present methods of teaching exceptions) have radical errors. As soon as scholars grammar has any province in their every-day life, to applied outside the sentences they puzzle over in the boundary transportant province in their study grammar because they "must" or "hat they must.

Composition, which in every school should be made a exercise, is generally regarded by long-suffering pupils vice of hard-hearted elders. And truly the common prerequires "bricks without straw."

There is no scarcity of ideas among school children, very natural lack of ability to express their ideas. Who to write creditable essays with absolutely no previous the art? The idea of requesting a scholar to produce a ing, under similar circumstances, would be universally absurd. Children must be taught how to correctly expression which they can comprehend. To attain perfection there a standard of perfection. Once acquainted with the principles, pupils must be trained to accuracy and new riting their letters or essays, till they are without radicintelligently pursued, this subject becomes one of the and interesting studies in our whole course of school in

However clear the perceptions of the teacher regarditions of his position, and however conscientiously he me perform every duty, it will be well-nigh impossible for his pupils a healthful and growing interest in school hearty sympathy of the parents in his work. Child shrewd observers, and when they perceive that their regard the school with indifference, they naturally give very positive endorsement. Thus home apathy to the is school frequently becomes one of the most discourage which the teacher has to combat.

lure of parents to visit the school where their children are cted, though unjust to the teacher, is an act of far deeper injusthe children. Good teachers are always glad of friendly sugns and never fail to profit thereby. Teachers of youth and erience, though of the best intentions, may be actually wrong in treatment of certain children, from inability to understand their arities and needs; and it is the province of the parent or guardian tify these errors of judgment to which all humanity are liable. spirit of the teacher pervades the school-room as the spirit of arent the home, and however great the disadvantages under he labors, it is impossible to conceal the beauty of an earnest, felt desire to give, which animates every conscientious teacher, re to give from the best of the mind, and heart, and soul, to the er brothers and sisters in his charge. Equally impossible is it guise the narrow, sordid spirit which accepts its work as a profitnd necessary incident of life, finding its only reward in the prove draft upon the town treasury.

perintendent.—MARY A. THAYER.

## SUFFOLK COUNTY.

## BOSTON.

inposition.—In harmony with the suggestions of the programme brence to the study of grammar and composition, it is well to be, that it is a matter of the greatest importance that an early be acquired of committing our thoughts to paper. This should so of the first objects of a school education.

e pen has greater influence in regulating the mental powers than a language, because, in writing, order is required in combining ranging our ideas. But another reason for making composition by part of our school instruction and study is, that if it be not enced before the age of twelve or fifteen, it will be very difficult, impossible, to acquire the art of writing our language with ease legance. The reason of this is obvious. The child begins in y earliest years to speak and think at the same time. It is the necessity of doing both at one and the same time. So in g, the mind has in fact to perform two acts at once; and it can do this well unless it begins very early, and by patient and per-

servering practice acquires a well-established habit. easy to think and speak at the same time, while the attempt to combine the motion of the pen with thought, all becomes confused, and they fail to accommatisfaction what they most earnestly desire.

"The only reason to be assigned for this deficiency is are not early taught to put their ideas on paper, so as t perfectly the association of the process of thinking are that of thinking and talking." When the practice of considered in this light, it assumes an importance as a second to none in the whole course of intellectual education.

Study of the English Language.—Again, the study of language is as valuable a means of mental culture as any other language. It calls into exercise the same p the same manner. It tasks alike the judgment and demands a knowledge of the rules and principles of every one who would express his own thoughts, or thoughts of others.

In teaching reading and its kindred branches, gram guage, the reading-book is of course that on which in a the powers of the pupil are to be exercised and his The selections should be adapted to the capacity of the not meant by this, such selections as can be very easily because there is, there can be, no advantage in having of mere words and babble over what they already fully un

The most advanced scholars, such as are found in our should be made familiar with the best specimens of ature. This is necessary in order that the mind may be wakeful activity. This is as necessary as it is "that mingle in good society, if we would have them acquideportment and polished manners." Especially should be taught to understand and appreciate the works of our This cannot be too earnestly pursued. A great point is the pupils can interpret the thoughts of a good authomade to feel their full influence. Their reading will the a mere mechanical effect, and will become an intelled demanding and securing that kind and degree of attential effort which they should be required to give and put

Place in the hands of scholars the productions of th minds,—productions which contain what is lofty in contain thought,—if you would bring their sentiments taste to a high degree of refinement. Manifold are to the faving the mind employed upon subjects so agreeable

methods of education have not considered the study of our lane, as connected with the common affairs of life, as furnishing nt subjects for conversation, or as a preparation for acting in l life with dignity and propriety.

the committee insist upon it with satisfaction, "that no study is useful and important than that which cultivates the taste and less a relish for whatever is beautiful, proper or elegant in writing, and to give vigor to the social affections, it creates a love for the tiful in nature and in character, it becomes a most fruitful source ental enjoyment, and if judiciously taught, it leads more directly any other intellectual employment to a delight in virtuous sitions and virtuous actions. And thus it becomes a positive I influence."

Word to Parents.—The committee cannot leave this subject of ation without offering to parents a word of well-meant advice. nts owe a duty to the schools and to their children which is not ed. They are for the most part ignorant of what their children oing in school, and do not understand and appreciate the influthere exerted upon them. It is sad to see how thoughtlessly easily children are given to the care of teachers, as if by so doing arental obligations were fulfilled. No wonder scholars become gent of school instruction and are hard to control. They see eel how indifferent is the desire of their parents in regard to best interests. This should not be. The influence of home d be tributary to that of the schools. Parents should visit them witness the conduct and progress of their children. This is ssary, that in the quiet of domestic life they may be prepared supply what is defective, to correct what is wrong, to confirm is valuable in the course pursued at school." Such visitation l not but result in good. It would secure an interchange of ght and purpose eminently desirable, and lead parents to rely the judgment and good intentions of the teachers. It would le them to become acquainted with the duties and difficulties of ol management. A very important consideration is, that such iarity with the schools on the part of parents would tend to them prudent as to the matter and manner of what they say at in regard to the teachers.

word is necessary in regard to health. Care is taken in our ols not to injure it; and if the health of scholars fails, this may be owing so much to hard study and close confinement in the ol-room, as to the thoughtlessness of parents in permitting them lently to attend parties or places of evening amusement. Posiendeavors to promote health are not so much needed as caution

in regard to indulgences sure to injure it. Debility and of peculiar attention. But in the case of children generall food, early hours, pure air and proper exercise are all the Parents, if your son or daughter has pale cheeks, lan weak body and a nervous habit, see if it be not owing and the atmosphere of brilliantly-lighted and crowde other exciting and exhausting causes, rather than the harigid discipline of the school.

Girls' High and Normal School.—The fundamental p governs men in their preparation for the various profe should regulate our conduct in regard to the preparation are to be the teachers of our Boston Schools. A N distinct from the High School, should be established for of preparing the daughters of the citizens of Boston better teachers than can now as a general thing be four vacancies which are frequently occurring, and thus grather efficacy and usefulness of our Public Schools." You be admitted to this school who intend to make teaching sion, and who have reached the standard of attainment the part of the graduates of the High School.

The course of study and instruction should comprise review of the studies taught in our schools, the object of be to give the pupil a knowledge of the best methods of the essential elementary branches—knowledge methodic and adapted to the wants of teachers. Its aim should each subject the severe, patient and persevering study is demands; to open to the mind new fields of knowledge and strengthen all its faculties. Such use should be abooks and manuals as will enable the pupil to "teach of them, by a thorough familiarity with the subject to the best methods of teaching and of government shoulful themes for discussion and instruction.

Such a system as we have in mind, only the outline be developed in this report, would secure in an eminent part of those trained under it, "freedom from irritabiliciousness; patience not weary of attending to minut minute opportunities; and steadiness of purpose never mere entreaty, or teased by importunity from a right de the way of duty,"—qualifications essential to a teacher.

No one pretends to doubt the value of having a clear what are the objects of first importance in education meet with persons tolerably qualified as to mere ments ments, but whose inefficiency as teachers is apparent. . .

y is often owing to their ignorance of the wants of children,—s which are as boundless as their immortality; to their ignorance he laws of mental development; to a lack of acquaintance with principles and modes of teaching and of government, and also of at appreciation of the work they have undertaken to perform. A bugh course of distinct Normal training will, in a good degree, by such wants, and no other course can. The pupils of such a colon will be found able to adapt means to ends, and to do what they to do as well as possible. Caring for the young when life is atest and happiest, they will feel they have assumed a sacred into. They will always be ready to bestow much time and study careful preparation for a successful discharge of their duties.

teachers, the committee are led to remark—and there is no quesas to the truthfulness of the remark—that as a general rule, those have received their education at our Normal Schools are our teachers. They "see that teaching has much to effect beyond bresent hour," and that excellence in teaching consists in giving direction to the mind and heart of the pupil as will tend to be his best interests. They have habits of invention, of self-reliand self-government; they appreciate the relation they sustain the welfare of humanity. What they do is the result of design, consequence of a well-directed plan, and wisdom appears in all tworks.

is also important to suggest that many would be found in the a School who could not afford the time to pursue its full course, would desire to avail themselves of the privileges of the Normal sol, after one or two years' study at the High School. Such ls, if they give evidence that they may be able to teach well, ld be allowed to do this, and prepare themselves to teach in the nary Schools and lower classes of the Grammar Schools, while who desire to pursue the full course at the High School should llowed to do so. The Normal School should be graded so as to the wants of all who may desire to become teachers. Thus in ere would be no privileged class.

t the head of such a school should be a man of experience,—one would not need to lay down certain rules and regulations, and rize upon paper in regard to any department of such an undering. He should have in his mind plans and methods which have hed results, which are beneficial and remarkable, and which show he is worthy of confidence and a liberal support. His system, if peculiarly his own, should be a system not just thought of devised, but the result of observation and experience. It should

have the sympathy of educators and the confidence of t should be one who would have a high appreciation of preparing others to teach. Thus would he sow the se and correct principles, and exert an influence in the hi salutary to the social, civil and religious interests of men be felt to future generations, and tell upon the destinies forever.

Primary Schools.—A brief notice only can be given the other schools. A citizen of Boston, a gentleman of and sincerity, for many years a member of the Primary when it existed as a distinct body, visited in 1856, in of friends from Scotland, several of our Primary Schools. again visited several of the same schools, with the same they all remarked with surprise the change and improvent in the classification, instruction and discipline of the in the bearing and influence of the teachers.

These schools have received direct and uniform sur the superintendent. He has seen them under favorable able circumstances, on pleasant and stormy days, and at the year, and has learned their condition and wants. met the teachers and made known to them what was w was defective or wrong; the effect of which has been to eminent degree, unity of thought and action, and awak and purpose to pursue a course which promises ever son Mention is here made of some of the improvements in these schools. A complete "programme of studies for classes has been introduced, defining with distinctness t done by each teacher, and thus greatly increasing the her instruction by providing a standard by which her to a reasonable extent, tested." Desks and comfortal taken the place of the arm-chairs in use many years. slates," most important helps to progress, have been into "primary tablets," designed to facilitate instruction no ing, but also in most of the other branches taught in have also been introduced.

Systematic instruction is given in vocal music, under accomplished teacher. Physical training and vocal a features prominent in these as well as in all our school atic effort to secure "the health and vigor of the school carriage of the body, proper habits of breathing, also determined the voice, good reading, speaking and singing." The improvements and steps in the right direction, and there

eve that the Primary Schools are accomplishing the purpose for ch they were established, quite as well as those of higher grade. The teachers of these schools have to do with the young when life rightest and happiest. Let them appreciate this, and remember a closely they are bound to their pupils for good or for evil. Let m consider the influence of character. Let them consider that the ice of character, by the blessing of Heaven, may be within the trol of the will, but that the influence of character itself is beyond control of the will.

What a teacher is, is ever photographing itself upon her pupils, she cannot help it. "If her heart glows with love, its warmth radiate." "If she is selfish and cold, the cold will chill the air around." She may not think of this; she may even be unconsus of it; but it cannot be questioned. "The instructor who loves at and is loved the best, will commonly prove to be the most efficance."

Evening Schools.—Many of these schools are accomplishing their pose well. In their organization, management and cost, inexperie is at first a hindrance to complete success. Still, the citizens of ston will be glad to know that hundreds of boys and girls, children orphanage, intemperance and want, have found in them an asylum which they may retreat from the storms with which the sky of ir youth is overcast. Were they not in these schools they would in the streets, exposed to danger, vice and crime. Men and boys, men and girls, whose education has been neglected, and who have work during the day, are regular in their attendance and quiet and entive to their studies. One school shall be noticed. This school rins on the first Monday in October, and continues six months. It sists of a male and female department, and holds four sessions h week, two for each department. Many of the men have attended r evenings each week. Both departments have been as orderly as ny of the Public Schools. The teachers have expressed their asure and satisfaction on this account, and have devoted themves to the interests of their pupils. Many of the boys and girls, well as adults, have made progress in their studies, alike creditable themselves and to the school. They are among those who have ended the school regularly for two or three sessions, and have so en themselves to study as to receive the confidence of all most erested in them. Others have learned to read and write, who did know the alphabet well, and who could not use the pen when y first entered the school.

The Evening High School for males and females has been a great

success, and hundreds have received the benefit of its influence instruction.

Schools for Licensed Minors.—Two schools for licensed mere established three years since. Boys licensed to sell paper black boots on the streets are admitted to their privileges. Use the care of teachers well qualified for the work, these schools accomplished good results. The boys are not only taught may the branches usually pursued in our Primary and Grammar Schools but also lessons in morals and good manners. Many of the rude and neglected have been the most punctual, and any or miliar with them could not fail to see how much they have been sed and benefited by the disinterested and faithful instructions of intelligent and devoted teachers. The committee feel confident these schools will continue to be a success, provided the proper cers are earnest and faithful in looking after and caring for those are disposed to violate the city ordinance in reference to "Liceminors."

Superintendent of Schools.—The proposition to appoint a sup tendent of the Public Schools of Boston was discussed in the council, and in the school committee, for several years before i adopted. The papers of the day entered fully into the consider of the subject, and the public mind was deeply interested. mature deliberation the office was instituted by the school cor tee in April, 1851; and on the 13th of May following, the fir perintendent of the Public Schools was elected. The office instituted with the belief that "it would add greatly to the effic and usefulness of our Public Schools." Twenty years of its ac have shown that this was a wise judgment. The present incum has occupied his position for nearly fourteen years. During time of his connection with the schools many important changes taken place. The Primary Schools have very decidedly and pr bly felt his power, as the instructors and committee well k Their condition has been improved, not so much by great and ma events, as by more unnoticed and constantly recurring change

Much is due in other respects to the influence of the office. I source of information to teachers, to parents and to the comm It helps more than anything else to model our schools, and at comfort and strength to those employed in them. It forms deepens a general interest in education by the able reports wit sends forth. The influence of the office has been to advance p instruction, not only in our own city, but throughout the State country. Its reports—the only source from which can be learned.

ue condition of our schools—are published and highly appreciated other lands. To these we are indebted for much practical knowldge, for better sentiments on matters of school instruction, and for any things which, as steps to future progress, or important as an and and principle, lead to eminence and usefulness. These reports themselves evidence of the truth of what has been said.

Committee.—Loring Lothbop, Chairman; George D. Ricker, William Pope, oody Merrill, Samuel G. Bowdlear, John S. H. Fogg.

Dorchester High School.—The school is organized on a plan somehat different from that of either of the other four High Schools of is city. It was established as an ordinary town High School, for oth sexes, in which boys are fitted for college, and in which both bys and girls are instructed in the higher branches. Its programme, nerefore, has always included a classical course, as well as the usual outine of French, German, mathematics and the sciences. Its regur course is completed in three years, but a fourth year's study is proided for those who desire to continue longer, and diplomas are warded to those who are graduated in each course. While the plan f study, which is a combination of those adopted in the Latin, the nglish High, and the Girls' High and Normal Schools, has some isadvantages in the greater variety of the objects to be attained, it so has some manifest advantages. It is not always that a boy enterig the High School to fit for College, is found, on actual trial, to be hysically and mentally qualified to realize the ambitious hopes of arents. Then a change from the Latin to the ordinary High School ecomes necessary, involving a sacrifice of pride and even of selfespect, which is prevented in the common New England High chool, where, without being obliged "to get the hang of a new chool-house," he may quietly adapt himself to the new circumstanes by simply dropping his Latin. The altered financial circumstanes of parents may sometimes render this facility of change desirable. n the other hand, it occasionally happens that young men, as their culties begin to mature, develop a degree of industry, energy and tellectual ability whose existence was not before suspected. In a chool on this plan, such a young man may add the classical course his other studies, and prepare for College without disturbing the sociations and the harmony of existing school relations. Examples both these cases have occurred in the experience of the Dorchesr High School.

Chairman .- WILLIAM T. ADAMS.

The spelling-book is the symbol of popular education and justly for it is the first word-book, and words are the medium of all tering. Normal Schools would do a good thing if they would tertheir pupils how to use the spelling-book in the school-room. The greatest blessings are liable to the greatest abuses. No school-be in these latter days has fared so hard as the dear old spelling-book in the first place, the book-makers have metamorphosed it into ugly shape. Most modern spelling-books that I have seen ough be entitled "Spelling made repulsive." But the great antagonist the Speller has been the modern educational maxim, "Ideas be words," a maxim which is good within certain limits, but which bad outside those limits.

But the spelling-book is probably destined to a great longer The witty description of it, as a collection of nonsense columns, much to cause its neglect for a time. But that bon mot has lost power, and the spelling-book is regaining favor. Still, there those who regard it as a necessary evil. For one, I value the s ing-book, and its right use in school I regard as very important. reading of the spelling-book as a preparation for study, and to s extent a substitute for it, is working well where it is well done do not like much simultaneous reading, or pronouncing by the tea for the pupils. If a pupil in his turn fails, the class might be ca upon. By reading is meant spelling on the book,—naming the les and syllabicating. The skilful teacher slides rapidly over the words, or omits them altogether, and gives the time to the ha words, not the hardest list, until all the rest have been gone of What a waste of time to set a pupil to study a spelling lesson, words of which he cannot pronounce! It should be rememb that pupils learn spelling mainly by practice, and not by studying lessons assigned. The teacher who would get along well with spelling-book, should occupy much time in reading and spelling lessons, and little in study, and not be annoyed by failures in t early stages.

Those schools pleased me best in arithmetic where most atten was paid to practical questions. In nearly all the lower classes far too much time is spent on questions involving large abstract to bers. It is a wretched waste of time to keep young children a time on the addition of long columns of large abstract numbers is a mere mechanical operation, and does nothing towards making pupils intelligent on the subject of arithmetic. How long and the pupils in the sixth class be instructed in numeration before begin addition? About fifteen minutes. The instruction in writing numbers should be taught incidentally, as they seem

seeded. If you admit the absurdity that you must begin addition dictating numbers as high as hundreds of millions to be added, ant that numeration must first be taught. The aim in teaching hmetic should be to make children intelligent on the subject, and best way to do this is to give them plenty of practical problems, duated to their ability, and then afford them the requisite assister in solving them, and no more. The text-book is of not much where the teachers are competent, except as a repository of appriate problems. In our Boston schools there should be no sher who is not capable of teaching the subject of arithmetic hout relying upon the book.

love to see order and beauty, and therefore I am pained to see a per kind of order and beauty sacrificed to a lower kind. Pupils ed according to their size present to the casual observer a pleasspectacle. If one desires to see an order and beauty of this sort, a large and splendid scale, he can see it in one of the great schools New York. I saw there in a fine hall a thousand pupils arranged heir settees with the strictest regard to their height. The effect narming. I see a tendency to imitate this spectacle on a small e in our school-rooms. But where this is done, a true and useful er is sacrificed to an order of no practical utility to the children. y are not sent to school to be made a show of, but to be instructed. re is great advantage in seating pupils according to their charr and temperament. The nervous, active, excitable pupil should eated in the back part of the room, while the sluggish and lazy ald be as near as possible to the teacher. The short-sighted ald, of course, be seated where they can see the blackboard. n, judgment and ingenuity should be used in placing the honest the dishonest pupils in appropriate places. All this is not to be the pupils. It is not necessary, in most cases, that the pupils ald know the teacher's reasons for assigning their seats. It is igh if they have a general confidence in the teacher's endeavors o the best thing for all. The pupils of a school are seated in the order where they are arranged solely with reference to their pline and instruction. This may seem to some a small economy, it is the sum of small economies which produces the grand results. experience in Teaching.—The increase in the salaries of our teacht the beginning of the second year of service is intended, prob-, as an equivalent for the experience gained. I do not object to provision; its aim is obviously just and proper. Why should apprentice be put on the same footing with the skilled workman? it is practically very difficult, in a great system of schools, to out the stipend of teachers in exact proportion to the value of their services. Were the salaries to be graduated according to progress of teachers in acquiring skill, what a metamorphose with pay-roll have to undergo! Some teachers would get increase pay each month, and some, I fear, would very soon reach maximum.

It is obvious to the most superficial observer that the val experience is not measured by its length. I am told, as a recon dation of a certain teacher, that he has had ten years' exper But, I ask, has he had ten years' experience in the true meani the word; or has he merely floated with the current, mechan doing to-day what he did yesterday, the same old thing over an again, discarding no errors, adopting no improvements? What proofs, tests, experiments, observations has he made? What in tion and enlightenment, what practical acquaintance with his bu has he acquired? "To most men, experience is like the stem of a ship which illumine only the track it has passed." To the experience is the mind's eye to look before and choose the right Bacon's precepts in this regard are pure gold: "In the discha thy place, set before thee the best examples, for imitation is a gl precepts; and after a time set before thee thine own example examine thyself strictly, whether thou didst not best at first. N not also the examples of those that have carried themselves ill same place, not to set off thyself by taxing their memory, direct thyself what to avoid." Roger Ascham, the author first, the best, and almost the only educational classic in our t gives us the brightest example in his own practice and the precepts in his books. His experience was so fruitful, because enlightened by so much knowledge. He knew what Plato teach him concerning the principles of his art; he knew well w the wise Greeks and Romans had said about education. Summ the doctrine of experience, he says: "Surely, long experience profit much, but most, and almost only, to him that is dil instructed with precepts of well-doing. Learning teacheth m one year, than experience in twenty. Every craft and science eth in two things: in knowing of his craft, and working of his c for perfect knowledge bringeth a man to perfect working." Th doctrine is implied in Chaucer's well-known verse, which pair true teacher in nine happily chosen words: "Gladly would he and gladly would he teach."

The more liberal the teacher's education, the more skill he by experience. On the one hand, he is more able to deduce maxims from the facts which come under his observation, and other hand, he is more capable of applying general principles

practical business in hand. Some teachers would have us think that their success, such as it is, is wholly due to their own unaided experience. They plume themselves on their originality. They neither read educational books, nor visit schools, nor condescend to mingle in professional debates. These teachers are not to be envied or imitated.

But here is another teacher who is picking up all good things that other teachers know, and is reading what the wisest educators are saying, and is ever pursuing some branch of learning or science. To this man, experience is like the head-light of the locomotive, which illumines the track far before it. The teacher's library is not a bad index of the value of his experience. What books and pamphlets has he felt it necessary to buy, and what does he read?

Truancy.—The city is divided into ten truant districts, one truant officer being assigned to each district. These officers are appointed by His Honor the Mayor, and they are expected to give their whole time to the investigation of cases of truancy reported to them by the teachers of their respective districts, and in securing the attendance of absentees; that is, children whose names are not enrolled in the schools, and who are, therefore, not technically known as truants. Eight or ten years ago, I submitted to the board two special reports, embodying a history of the legislation in this State and city in respect to truants up to that date, and giving a detailed account of the whole machinery of the system as carried out in Boston. Since that time the number of officers has been increased in a greater ratio than that of the increase of pupils in our schools, so that they are able to render more assistance to the teachers in securing attendance. The system is working at this time, on the whole, very satisfactorily. The officers are efficient and faithful. Having been acquainted with the operations of the system from its origin, it is to me very evident that the success of the system depends almost wholly upon the character of the officers. To insure the highest success in his useful vocation a truant officer must be not only faithful and efficient, but humane and benevolent in his disposition.

It should be distinctly understood by teachers that the responsibility of preventing truancy does not rest wholly or mainly with the truant officers, but with themselves. By kind, firm and skilful management of their pupils, they are expected to maintain a fast hold upon them, and to create and keep alive among them a wholesome public sentiment in favor of regular attendance, and against absence except for good cause. The services of the truant officers are not to be regarded as a substitute for the efforts of teachers to prevent truancy, but only as a supplementary instrumentality, to be employed in reaching the cases which the teachers are unable to manage alone.

The two items which seem to me more interesting than any are those of attendance and expenditures. These two elements the system have an intimate connection with each other. It is ous enough that the larger the number of scholars to be taugh greater will be the expenditures, the other conditions being the But I have in view another relation between the cost and the ni in attendance, namely, the effect of liberal and judicious expend upon the aggregate attendance. This relation of cause and eff strikingly illustrated by the history and condition of our school tem. It appears that the whole number of children in the ci the month of May, between five and fifteen years of age, was a above forty-six thousand, and that the average whole number of belonging to all the day schools, during the year, was about third thousand. The precise ratio of the average number of pupils b ing to all the day schools to the whole school population, is sen six and four-tenths per cent. No other large city in the country show so high a percentage of its school population in attendar school. From this fact it may be inferred, I think, that no other has a system of schools which so nearly meets the wants of all c of its citizens. To one who understands the matter, it is plain en that this success of our schools is due very largely to the wise li ity with which they have been maintained. Foreign educa inquirers are often struck with the large amount expended of schools, and ask how it is that the people pay so largely and so fully for this object. But when they visit the schools, and see our system is no pauper system maintained merely for the child the indigent, but that it educates the children of the well-to-do c no less than the children of the poor, that it provides instruction enough for all and free to all, they find the explanation of the nomenon. The great mass of the tax-paying citizens send their dren to the Public Schools, and hence they favor liberal appropri for school purposes. If ever the time shall come when the ch of our tax-paying citizens shall be found generally attending P Schools, then the Public Schools will no longer be our prid strength; they will then be conducted on a low scale of expend and becoming cheap schools they will necessarily become at both poor schools, and schools for the poor.

In elementary education, there is little or no room for chorespect to the subjects of instruction. The course must be suitally the same for all pupils, whatever may be their destinatilife. With secondary education the case is very different, for seary education has two very distinct and well-defined functions: no (1), to serve as a preparation for a liberal education; and (2), to

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supplement to elementary education, preparatory to some occun or craft not requiring a higher or liberal education for its it. And then the pupils who desire to supplement their elementducation without going so far as the university course requires, f different classes and have different educational wants. Some but one or two years for secondary education before being enticed to the handicraft or trade which they have chosen, and , on the other hand, have four or five years for the secondary e as a preparation for a mercantile career. And again, others to fit for admission to a school of applied science, where the aim form men skilled in the practical professions, rather than men of and liberal culture. Then the sexes, it is believed by many, re somewhat different systems of training, after passing the entary grade. Now, it is desirable that the classes here enumerand others, should have the kind of instruction precisely adapted eir respective wants. With the view to provide for such wants r as practicable, many High Schools elsewhere have been organwith two or more optional courses of study; and where a muniity is not populous enough to justify the support of more than High School, such an organization is perhaps the wisest arrangethat can be adopted. But in a large city like ours, where there ligh-School pupils enough for several large schools, the better y, undoubtedly, is to maintain schools differing in their objects courses of study, instead of attempting to meet the wants of description of High-School pupils in a single school of vast ortions and numerous departments, or in a number of smaller ols of a uniform pattern.

s a matter of fact, we find that wherever education advances the s of educational institutions are multiplied. This is the law of ational progress. The city of Berlin affords a good illustration his law. No city surpasses it in educational advantages; and no has a greater variety of educational institutions, from its peerless ersity down to its Kindergarten Schools.

Boston is to maintain and advance her position as one of the ng educating cities of the world, the policy to be pursued is, to iply the kinds of institutions of learning to meet the new wants dvancing civilization,—to aim, not at excellency in simplicity, but llency in variety.

olding these views, I was gratified to find that the special comee on the High-School education of boys in their recent able rt, were unanimous in recommending the modification of existing ols, especially the Latin School, rather than the consolidation of school with the English High School, as had been suggested. That their decision in this respect was judicious, I think there c no question.

The modifications of the Latin-School course recommended adopted, are mainly, if not wholly, in harmony with its characte purpose as a school leading to liberal culture. The design of committee seems to have been to make the course even more en ically liberal than it had previously been; to make it a better pretory school than it had been, and thus render it more adequate substitute for the College, and not to turn it into a technical sche to make it a composite institution with incongruous functions. this school have, in the first place, a course of study which shall good as possible for the boy who is destined for College, withou cumbering it with extraneous and collateral matters, or with bra which properly belong to the College course. Let the pupils fairly complete this course receive certificates to that effect. If, provision were made for a subsequent course of two years, emb both scientific and literary studies, for the benefit of such studies having finished the preparatory course desire to continue their l studies so far, but cannot or do not wish to do this at College,—s modification of the old Latin-School curriculum, together wit introduction of the most approved methods of handling the st would constitute a true and substantial reform; such a modific would preserve all that is sound and good in this noble old schoo add to it only what is in perfect harmony with its original con tion, which happily has been perpetuated for so many generation constitution as a seminary of liberal culture, in contradistinction the plan and spirit of such schools as are called, in the modern e tional nomenclature of Europe, professional, or technical sci Such a modification, I apprehend, is substantially the aim of the mittee in respect to this school.

Dr. Arnold has very well defined what is meant by profession distinguished from liberal, studies: "Every man has two busines the one his own particular profession or calling, be it what it we that of soldier, seaman, farmer, lawyer, mechanic, or the like other, his general calling, which he has in common with a neighbors, namely, the calling of a citizen and a man. The etion which fits him for the first of these two businesses, is called fessional; and that which fits him for the latter, is called lib Uneducated parents are usually anxious that their boys should the first, while of the second they understand but little. They it a waste of time for their boys to study dead languages and sections; they wish them to be put upon commercial arithmechanics, book-keeping, penmanship, and industrial drawing;

y are right, if their boys have but two or three years to study or leaving the Grammar School. Now, if you provide for such ents only a Secondary School of the purely liberal type, you virtly shut them out altogether from the advantages of Secondary or gh-School education, and compel them to resort to private instruction. On the other hand, parents who have themselves enjoyed the cantages of a liberal education, and understand what it is, usually ire the same for their boys; in many cases they prefer the liberal cool to the professional for their boys, even if they are not to go cond it to the College course. This class of parents is very numering this community, and if you do not provide for them the liberal spical school, you virtually exclude them from the privileges of condary education at the public expense.

Our two great Secondary Schools for boys, the Latin and the Eng-High, have long stood as types of the liberal and professional cools, respectively. The latter has not, however, been a professionchool in the narrow sense, as it has always had some decided charcristics of liberal culture, especially in the scientific branches; the former has adhered too closely, it is thought, to the old route of grammatical drill, and too much neglected the claims of liter-

and scientific culture.

n reforming and improving these invaluable institutions, profound ly of the subject and the exercise of great wisdom are needed. e aim should be, not to try to combine all possible advantages in h school; such a course would destroy the peculiar excellences of h. They are to be improved by a judicious choice and limitation studies, and not by greatly multiplying the subjects of instruction. The English High School might be rendered more strictly technion the one hand, or more liberal on the other. Modification in ner of these directions would be easy and practicable; but would dification in either of these opposite directions be an improvement, ept in some not very important particulars? Is a modification oth these directions at the same time practicable? The proposiis very tempting, but I trust it will not be hastily adopted. poor economy for a great city to try to make a school carry ble. Instead of making our English High School much more dedly technical in its character than it now is, I should much preo see a separate school established, which should fill the existing in the technical direction between the Grammar Schools and the itute of Technology.

vening Schools.—These schools, during the last year, were more ely attended and more successful than they were during the preage year. The establishment of an Evening School in the Pri-

mary School-house in Harrison Avenue, where the higher br were taught, was an important step in the right direction. Evening High School was under the charge of Messrs. An and Woolson, masters in the English High School, as principal devoted themselves with great earnestness and success to its zation and management. They were ably assisted in the instr by Messrs. Nichols and Travis, sub-masters in the English School, and by Mr. R. P. Owen, a very competent and skilful to This school is destined, I trust, to become one of great important and utility. The whole number of pupils was 142; the avertendance was 83.

Schools for Licensed Minors.—There are two schools of the scription, one in North Margin Street, and one in East-street The average number belonging during the last half-year was 8 the average attendance was 68. The sessions are kept two h the morning and two hours in the afternoon. The boys who are chiefly occupied, out of school hours, as newsboys and boot the former attend at the morning sessions, and the latter at th noon sessions. The teachers of these schools are faithful and e and they are doing a very good work. It is very noticeab since the establishment of these schools there has been a great for the better in the appearance and manners of the boys who them.

School for Deaf Mutes.—This school was opened in Sep 1869. It is located at No. 11 Pemberton Square. The average ber belonging to the school during the last half-year was 3 taught by Miss Sarah Fuller, the principal,—who had been for years a very successful teacher in one of our Grammar School three female assistants. The system of instruction pursued is artificial articulation and reading of the lips. This is the employed at the Clarke Institution for Deaf Mutes, at North The teachers are working with extraordinary patience and ness, and the results of their instruction have exceeded expe Still, it is a question whether it will not be found necessary to supplement the method here used by others, which have lo employed, such as the manual alphabet, or the natural lang signs.

Vocal Music.—In this branch there has been greater progre in any previous year. For more than twelve years the comm music have steadily persisted in their endeavors to develop matic and complete organization of this branch of instruction. now have the satisfaction of seeing their patient efforts crown

success.

On entering the Primary School at five years of age, the child is at once taught to produce musical sounds, and to sing little pieces adapted to his capacity. From this point the course of musical instruction is continued by an easy and just gradation all the way up through the Primary, Grammar and High Schools. There are two features of the system which produce a strong impression upon the minds of competent visitors from other States and countries,—the thorough scientific training imparted to the pupils, and the provision requiring the instruction to be given mainly by the regular school teachers, aided and superintended in this work by a limited corps of professional teachers of music. The system is both efficient and cheap. It is found that about ten minutes a day properly employed, are sufficient to produce most excellent results in this branch. And everybody who understands school economy knows that the time thus devoted to music will not in the least retard the progress of pupils in other branches. For my part, I believe the general progress is the greater for this appropriation of time to music, such is its harmonizing and educating power. As our teachers advance in skill, as our books and charts and other teaching appliances are improved, and as our system of instruction is perfected in other respects, it will be found, probably, that even less time than is now devoted to it may be needed for this branch, and a smaller number of special teachers and supervisors of it. The very poorest singing that I now find in the weakest and most backward schools is better than the very best that was presented as a model only a few years ago. And the improvement in teaching music has very naturally helped the improvement of the methods of handling the other branches. As a general rule, teachers in an elementary school who teach one branch well, teach all branches well.

It is now just forty years since the first movement was made in this city looking to the introduction of vocal music as a branch of Common-School education. How slow has been the progress! So hard is the task to conquer prejudice and to convert conservatism! But the object has been accomplished. It is a great step of progress and well worth a struggle of forty years.

Drawing.—This branch has had a place in our programme of studies for many years, but its progress has been unsteady, uneven and unsatisfactory. The time has at length arrived, apparently, when it is to be placed on a proper footing in all our schools. Public epinion in this community has been turned to the necessity of systematic instruction in drawing in Public Schools, by the results of instruction which have been witnessed within a few years in the Institute of Technology, by the Act of the legislature approved May 16,

1870, requiring instruction in industrial and mechanical drawing, the vigorous movement recently made for the establishment in to city of a museum of fine arts, and by the reports brought home us from the Universal Exposition at Paris, in 1867, showing the diency of art education in America.

It is now understood, by well-informed persons, that drawing is essential branch of education, and that it should be taught to even child who is taught the "three R's." It is indispensable as an elem of general education, and it lies at the very foundation of all technical education. It is difficult to conceive of any human occupation which education in this branch would not prove beneficial. Even body needs a well-trained eye and a well-trained hand. Drawing the proper means of imparting this needed training. Drawing properly taught, is calculated even more than vocal music perhaps to facilitate instruction in all other branches of education.

Our success, after many experiments, in conducting the instruct in vocal music, has taught us how to manage the teaching of dring with efficiency and economy. It is evident that the actual clateaching in drawing, as well as in music, can be given by the reguteachers. They will, of course, need instruction and competent pervision and direction. This service can be performed by one a drawing-master, with a small corps of assistants. This course, whis the course recommended by the committee, is not only the best the pupils, but it is best for the teachers; for, in preparing themself for teaching drawing, their general ability and happiness will be protected. What teacher would not gladly hasten to avail himself the gratuitous instruction of a first-rate art-master, as a preparat for instruction in drawing in his own class?

Superintendent of Public Schools .- JOHN D. PHILBRICK.

# WORCESTER COUNTY.

### ASHBURNHAM.

There is a diversity of opinion in regard to what should be taug in our schools. The majority of our youth commence their school days at six years of age, and continue in school about one-third of t time till they are fifteen, thus making about three years of school attendance. If, instead of one-third, three-fourths of this time we spent in the school-room, with, perhaps, three years added, it would not be a hard matter to prescribe a course of study. But when there is so much to be learned, and so large a field to select from, and so short a time allowed to our youth, it is difficult to decide just what should be crowded into these three years of school life. We know of no better guide than the saying of the ancient Greek philosopher, Aristippus, who, when asked what boys should learn, replied, "What they will practise when they become men." First and most important are the principles of religion and morality; without these life is a failure. Second in importance, is a knowledge of spelling, reading, writing, arithmetic, geography, grammar and mechanical drawing.

Each one of these should receive due attention. Any one of these should not be pursued to the exclusion of the others. We find many boys in our schools who are, by the request of their parents, making arithmetic their principal study, sometimes to the exclusion of everything else. When requested by the teacher to take up geography and grammar, the reply almost invariably comes, "Geography and grammar.

mar don't do no good."

Frequently the child is armed with the authority of his parents in making this reply. Here is a conflict of authority that is exceedingly appleasant to those having these scholars under their care. Geography, grammar and mechanical drawing, can be studied at the same time without any detriment to the arithmetic. We find that those pupils who have a variety of studies are as well advanced in arithmetic as those who make arithmetic their only study.

We notice when we visit schools, that the child who has a slate and pencil has an inclination to draw something; only let this inclination be trained in the right direction, and the child may become an artist who will honor the profession. If he does not become an artist, he will acquire a knowledge of symmetry and form, a power to discrimate between the graceful and the ungraceful, the well-proportioned and the ill-proportioned, and a skill of hand which will in after-life be considered invaluable. It is well known that in all kinds of mechanical pursuits, skilled labor is in great demand, that the pay a skilled workman commands is double that of the unskilful. A young man who enters the workshop with a knowledge of mechanical drawing will acquire skill in a few months that would otherwise take years to acquire. It is hoped this subject will receive the attention in our chools its importance demands.

School Committee.—W. F. WHITBEY, N. EATON, G. C. FOSTER, A. JEWETT, R. PUF-

## ATHOL.

Vocal Music.—We have encouraged singing in all the school The Depot Village and Pine Dale schools excel all others in the branch of culture. Those who have been present at examinations, who have visited the schools, can testify to the great value and in portance of this practice of the art of singing. The children are hapier and the school-room is made a more pleasant place. We cannot afford to lose the influence of song as a means of culture. The noble sentiments and emotions of the human heart find their truest and most impressive utterance in song. Children love to sing and grown peop do not sing enough. Singing is appropriate everywhere—at the we ding and the funeral, the church, the social gathering, the home at the workshop. The more people sing the less they quarrel, and who angry if they would sing Old Hundred twice with spirit and it before giving vent to wrath, anger would effervesce in song, and the spirit would at once be calm and serene. Try it.

Drawing.—Bartholomew's drawing cards have been put into all ti schools the past year, excepting the higher grades, and all the young scholars have had daily exercises in simple rudimentary drawing, ve

much to their pleasure and profit as we believe.

Superintendent of Schools.—This is the first year that the town hemployed a superintendent of schools, and from the fact that the committee have been authorized to employ a superintendent for anoth year, we think the result of the experiment has been satisfactor. The superintendent has endeavored to secure competent and efficie teachers, having due regard to economy. In this he has not alwassucceeded to his satisfaction, or yours, but when we remember that have had forty-eight terms of school with no very bad failures, a certainly have cause for reasonable satisfaction. Parents have man fested more than usual interest in the schools the past year, which shown by the large number of visits recorded in the registers, and the large number that have usually attended the closing examination. If parents will cooperate heartily and earnestly with the teacher committee and superintendent, our schools will soon be the pride a ornament of the town.

Superintendent.—JAMES P. LYNDE.

### BERLIN.

The injury to our schools, and the wrong done to the youth of town in withdrawing so many from our very limited school privileg at so early an age, should command the public consideration. If

were to give them additional opportunities elsewhere, we would not complain. But ordinarily, it is only for a pecuniary gain. Such is not to be lightly esteemed, especially when the parent or family have special need of it. But frequently it is only a barter between knowledge and money; in pocket, or "out of pocket," as may be. Openings for labor and pecuniary gain are a blessing to a town; but when improved by the sacrifice of needed mental culture, the gain is not profitable.

School Committee.—W. A. HOUGHTON, WM. BASSETT, E. C. SHATTUCK, JONA. F. WHEELER, FRANCIS RAND, ISRAEL SAWYER.

### BOLTON.

Tools to Work With.—A good teacher, a thoroughly faithful and competent teacher, male or female, is one of the most valuable and should be one of the most honored members of the community; and to have such a teacher for its young people any community might well tax themselves to the utmost extent of their ability, and even submit to what, but for such a consideration, would be considered hardships and privations. But essential as the teacher is, we should consider, also, that there are other things quite as essential; we should remember that to effectually accomplish what is expected of him, the teacher must have, along with the good-will of parents and friends, tools to work with, or, in other words, the "furniture," to quote from a former report, the means and appliances with which every school-house ought to be supplied. This is a topic not unfamiliar to such as may have read the reports of our predecessors, but one which, from its importance and the large place it occupies in our minds, we cannot bring ourselves to pass over in silence. It has been a fault with our Yankee style of instruction, however excellent may have been its quality otherwise, that it has been too purely abstract, dealing too exclusively with treatises, principles, rules and processes, and but seldom or never coming in contact with realities of every-day life. Hence it is not, or was not awhile ago, an uncommon event by any means to find even readers of the first class who, if called on unexpectedly to take up a newspaper article at all elaborate, could not read it off intelligently and correctly; and geographers, deep in the science of geography, who could not apply their knowledge to what was right before their eyes, nor locate properly places of which they were hearing in the news of every day; and arithmeticians and geometricians who would stand utterly confounded if told to find the cubical contents of an apartment, or name correctly the number of cords in a pile of wood. Now what we mean to say is, that, besides its blackboard, slates,

maps, text-books, every school-house ought to have measuring re measures, globes, specimens, which would enable the teacher to g ocular demonstration or illustration of what his scholars were learn from their books. So that no pupil should learn anything as a m ter of mere memory solely, not at all or only half understanding but should have the thing, whatever it might be, if practicable, right before his eyes; so that with the help of a good globe, he wo see for himself why the days are longer in summer than in winter, why in one case there must be more warmth, and in the other m cold; so that, with a scientifically illustrated map before him, like of Guyot's, which he had been taught to interpret, he would be a to read off the geographical features of a country, its mountain river systems, its climates, its productions, almost at a glance; so the with such a map before him, and the description of some observ and intelligent traveller, he would be able to journey over the ear surface almost as well as if he were actually conveyed through various regions by car and steamboat. And so of many other thin of which time will not allow us now to speak.

School Committee.-RICHARD S. EDES, JOSEPH BARBER, ANDREW L. NOURSE.

### CHARLTON.

Large and Small Schools.—There are two or three districts wh might be consolidated without doing injury to any one. Living close proximity to the school-house does not always make the g scholars, nor does it insure punctual attendance. Boys or girls v rise early and make extra efforts to be punctual at nine o'clock in school-room, will also see that they are not behind in their stud Besides, there is the enthusiasm kindled by numbers. It may se strange to many who are unacquainted with the workings of school-room, that a faithful teacher will prefer a school of forty or pupils to one of ten or twenty. Schools are very apt to become less when the number is small. In a large school the teacher s learns that every moment is precious, and will shape her con accordingly, and, if she is adapted to her work, become enthusia in her profession; and this enthusiasm will likewise extend to pupils. Consolidating several schools would, therefore, not only s expense, but have a strong tendency to improve the schools, increase their usefulness.

Two or Three Terms.—A year's experience has fully proved usefulness of the plan of having three terms—the spring and autoterms nine weeks each, and the winter term twelve weeks. We the subject was brought again before the voters of the town at

nnual meeting in March, there was no opposition made to the measre. The long vacations which usually existed are now shortened, so not the children cannot forget what they have acquired during the erm.

School Committee .- J. H. HATHAWAY, EDWARD SMILEY, JOHN HAVEN.

### DANA.

The State Teachers' Institute.—The institute held in this town last all, was, in the opinion of your committee, teachers and citizens who stended, highly beneficial to the cause of education, not only with gard to the very great amount of valuable instruction imparted hereby, but in giving a new impetus and enthusiasm to the cause of epular education, the value of which, to the community, cannot be present imated.

School Committee .- M. L. LINDSEY, A. J. NYE.

### FITCHBURG.

The High School consists of four classes. One class graduates and ne enters each year at the close of the summer term, four years being quired to complete the course. Scholars who have completed the Il course satisfactorily are graduated and presented with a diploma. cholars enter the school on passing an examination in arithmetic, ammar, geography and history, together with reading, writing and elling. There are three regular courses of study in school, either e of which the scholar may choose on admission. If the parents or holar have no definite choice, such advice is given by the principal in his judgment is adapted to the case. One is the college course. ais is mostly classical. The second is partly classical and partly nglish. The third is wholly English. In addition to these we now ve the miscellaneous course. With some one of these courses we nk all may be reasonably well accommodated. As system and cipline are essential to success in all schools, it is not desirable make frequent changes in studies. So that when any course is tered upon either by direction of the parent or by the choice of the olar, it is not expected that changes will be made without the very t of reasons. This is a matter which should be carefully considered the outset. The course pursued in the miscellaneous department letermined at the commencement of each term and is made to ommodate the greatest number possible.

School Committee.—Alfred Miller, C. H. B. Snow, Geo. D. Colony, Henry L. Es, Thos. S. Blood, George Jewett.

### GRAFTON.

We are glad to have the opportunity to commend those pare and friends who have encouraged teachers by their visits to the schoroom during the past year and at the examinations. This is as should be. The bond of sympathy and common interest thus mad thing of manifest existence, becomes a power full of quickening a encouragement. Teachers should not be our only educators. Whall parents, guardians and citizens can be made to see that every extribution to the Common School of money or influence, is an act contribution of wealth to their pockets and safety to their interest that the Common Schools are cheaper every way than our criminstitutions, and that their direct tendency is to diminish shiftless and poverty, then no sacrifice in this direction will seem disproptionate to the compensation.

School Committee.—A. J. Bates, J. W. Bigelow, J. H. Windson, W. D. Weres, D. W. Norcross, J. Goodwin.

### HARDWICK.

You want your physician and your minister to spend a long time study and special preparation for their work; yet the training of y children in the most susceptible period of their lives is often intrus to those who have never spent one hour of special thought in prepare tion for that work. It is a very common thing, especially in the rural towns, for young men and women to take situations as teach for a term or more, not because they have any special liking or fitz for it, but because they have nothing else to do. They have no ent siasm in it because it is a merely temporary occupation. For t state of things we consider both the people and the teachers fault. Public sentiment should demand a better class of teach and those who propose to teach should make special preparation that work; then they would become better teachers. Let the pu demand Normal Schools, and Normal graduates only be in demand as teachers, then there would be a grand sifting out of those who te merely for convenience. But Normal graduates cannot be had once, and perhaps, in the mean time, all who have the requisite na ral qualities of a good teacher cannot attend such a school. Such sons can do a great deal towards preparing themselves for success teachers. They should study, first, to realize the responsibility their situation; then, to gain a knowledge of the most appro methods of teaching and practise them. Many who act as teach suppose that because they can work all the difficult problems for the pupils, and hear recitations from the text-book, therefore there is no need of their studying at all; but this is not the thought of the true teacher. Those who cannot have Normal School advantages should study by themselves and do their very best to understand every principle on which rules and processes are based, and then drill the scholars on them until they understand them as well as the teacher. We would recommend to every teacher to procure some good work on Normal methods of teaching and study it faithfully. "Holbrook's Normal Methods of Teaching" and "Page's Theory and Practice" are as good as any. Make these methods your own and apply them the very best you can, and, if you really enter into the spirit of them, you would be surprised as well as gratified at your own progress, and your increased power in the school-room. This will not relieve from close study, but to the thoughtful teacher it will prove very suggestive. We do earnestly request of our teachers that they get out of the old rut which our grandfathers followed, and forsake those old fossil methods of teaching. They were good in their day because there were no better known; but this is an age of progress.

We would recommend first that the people require the examination of their teachers to be in public, and that as many as possible attend and see for themselves how well the candidates are qualified for the work. This course would not insure good schools, but we think it would be a stimulus to the teachers, and tend to increase the public interest in the schools. Private examinations must, in many cases at least, be mere formalities. The committee cannot always spend two or three hours with a single candidate, and so the examinations are hurried over. But let them be in public, and all the teachers notified to be present; then those who are really in earnest will have a stimulus to prepare for such a test, and others, who would not hesitate to blunder through a hurried private examination, but without energy enough to prepare for a thorough and public one, might think best not to attempt it at all. Again we repeat, let it be demanded that these examinations be in public, and that they be no farce, but that they be a real test at least of the teacher's intellectual ability to instruct according to modern and approved methods.

School Committee .- W. D. BROWN, JAMES P. FAY, WM. A. WARNER, Jr.

# HOLDEN.

Then, too, though we pay liberally as compared with what was paid a few years ago, and in some cases liberally in comparison with the value received, we do not, as a rule, pay enough to command the continued services of experienced and talented teachers. Then, again,

the duty of providing teachers is often deferred until just before commencement of the term, when the choice must often be made among strangers, or those who, under other circumstances, would have been accepted. Failure follows. In our cities and larger schools are now sustained not less than three terms, and the teare engaged by the year. The result is, that most of our efficiences successful teachers find it for their interest to secure these permitteness, thereby rendering it more and more difficult for comming the smaller towns, having but two terms in the year, to possible and competent teachers.

Apparatus.—In the report last year attention was called to a meagre manner in which our school-rooms were furnished, a great importance of the subject induces me to allude to it. Twenty-five per cent. of the town's share of the State school (\$44.58) has been expended in procuring such articles as we essential in imparting instruction to the Primary department schools. These have done excellent service, but have come so supplying our actual wants. Every school needs a set of geometrical figures, a full set of the national tablets (we have sets now), drawing cards to amuse and instruct the little one good globe and set of outline maps for the improvement of scholars. A few hundred dollars thus appropriated would be a repaid in the facilities it would afford the teachers in giving tion, and conveying a great amount of useful knowledge in exercises, and without which their pupils must remain ignorance.

In one school (Miss Moore's) drawing has been successful duced, and, while it proved a source of innocent amusement the smallest, many of the specimens exhibited considerable to skill in the larger pupils. This is a new feature, and its intrinto our schools generally would mark a new era in Common education. It is highly practical. It is one thing to know another thing, equally as important, to be able to express the known to others; and this can often be done more accurate forcibly by drawings than by words. It brings out and quick life a power or faculty latent in the mind of every child, and tutes education in its truest sense.

Superintendent .- WM. C. METCALF.

# HUBBARDSTON.

Teachers and Teaching.—The school is made by the teac matters not how fine the building, how abundant the means tration or how efficient the supervision; there will not be a se chool unless the teacher appreciates his work as one who is to teach hose under his instruction how to make life a success—how to do and et the greatest amount of good. In order thus to teach them he must onsider carefully the ability and need of each of his pupils, and must e able and willing to work earnestly to make each pupil what his creator intended him to be. Let teachers of experience and educaon be employed. The more liberal that education, the more skill he equires by experience. Such are able to deduce sound maxims from ne facts that come under their observation, and can apply general rinciples to the practical business in hand. Success demands culture, coad and true. The teacher should have a comprehensive idea of e condition of modern thought in all departments, and the power nd learning of a master in that which he assumes to teach. He must e able to go behind text-books and bring out fresh and original coneptions from his field of study. There must also be self-control, and, fact, the teacher requires the elements of character which belong to successful military leader-strength, energy, firmness, quickness of erception and promptness in action. Eye, voice and bearing must speak the commander—not dictator, ruling by force—but a superior, ho governs by virtue of what he or she is.

School-houses.—Too much attention cannot be given to the surundings amid which we place our children, if we would give to them symmetrical and finished education. The house should be commoous, tasteful and ornamental, and be kept in the most perfect cleanliss and repair. But some are ready to say that such a course would most unwise, for it is notorious that scholars have no regard for e public property, and are ever watchful for some opportunity to use eir pencils upon the walls and their knives upon the benches, and, side, windows and doors especially excite their propensity to stroy. Now we are not willing so readily to impeach the character d taste of our children. We think where scholars are notorious for ch bad conduct it is because the town is notorious for its neglect of own property and interests. A boy cannot resist the temptation start that stone from its bed and set it in motion down the hill, ich seems just ready to start of itself, although it may do much mage on the way. So a dilapidated house will excite the mischievvandalism of thoughtless boys. We need not say the school perty, when it came into the hands of the town, was in a wretched dition. Some of the houses were an intolerable shame to the lic, and it became the duty of the town officers to make some airs at once. The first year we were censured for not doing more, the last for doing too much, while it is evident that only a begin-A has been made of what ought to be done. The statute makes it

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the duty of the school committee, unless the town otherwise direct to keep the houses in good repair; so we were necessitated to something, and we have done as well as we could. If others cou have done better we sincerely wish the job had been in their hand Now since the school-houses have reverted to the districts, we ho they will vindicate the claim that such a course was necessary, if v would have them kept in a good condition.

School Committee .- PORTER M. VINTON, HORACE UNDERWOOD.

# LEICESTER.

Drawing.—Drawing has been introduced into most of our school in accordance with the school laws of the State. Being a new thir it was attempted at the commencement of the spring term as a sort experiment. It succeeded well and to the satisfaction of the co mittee. It is now made a distinct exercise in a majority of the scho in town. It is not only a new but an interesting feature of instru tion. There are instances of commendable excellence in this department. ment to be found in the several Grammar Schools, and they devel a talent and aptitude in this respect which doubtless will, if prope cultivated, be of great practical value in time to come.

It is believed, also, that the practice of drawing, whether maps figures, which is performed without the aid of rule or measure, w only the eye to guide in their construction, has assisted the pupil the art of writing, which requires special steadiness of the hand order to attain to any respectable proficiency in this direction.

For the Committee.-L. Holmes, Chairman. L. G. Sturtevant, Secretary.

# LUNENBURG.

In towns like this, where the custom still prevails of keeping schools but two terms in the year, in the summer and in the win the older pupils attending only in winter, and where a regular sys of gradation is impracticable, the practice is beginning to prevai maintaining for one or two terms, fall and winter, a special school the benefit of those older and more advanced pupils. We are so fied that such schools, kept in some central place, are productive great good, for they attract pupils from every portion of the to giving to them the advantages of instruction in the higher brane during the season of the year when they can best attend.  $\mathbf{B}\mathbf{y}$ withdrawal of the older scholars, the Common Schools retain same character in winter as in summer, doing away with the necess of changing teachers with every term. In this simple way, the stantial advantages of a system of graded schools, as enjoyed by the children of cities and populous towns, may be extended to towns less populous and sparsely settled like this. And we have taken much pains to learn of the results of such schools, and find, to our great satisfaction, universal success and approval. It may be claimed that the committee have no right to establish a school, or schools of this class, but, we beg to say, that since the removal of district lines, if not before, the school committee have full practical control, both in the creation and maintenance of these schools.

School Committee .- C. A. GOODRICH, A. C. ESTABROOK, O. L. SPAULDING.

# MENDON.

The superintendent would here record, to avoid misunderstanding, his belief that the true policy of the town is to build plain and economical houses, especially so as regards externals. Let the school-house be neat and neatly painted, and look as well as the homes of the children generally. Let the interior be well fitted up with comfortable furniture. Let ventilation and warmth be well considered; and all needful apparatus, maps, charts and books of reference be always at hand; in short, fit up a place exactly suited for the comfort and convenience of teacher and scholars. All this can be accomplished with small outlay for style, for which our people will hardly feel that they can afford to pay.

The falling off at the north end is partially accounted for by the miserable state of the school-house, and that at Albeeville is due to causes to which allusion will hereafter be made.

No investigation would reveal any lack of interest engendered by the want of district influence in school affairs, but rather in some cases the reverse. Last year three very small schools attained ninety per cent. average attendance for one term; this year five large schools, including the High School and two small ones, reach or surpass this average; while in 1869 but one school barely reached it. In 1863 no school in town averaged eighty-five per cent., and but one the next year attained even this low average.

It would be hard to find a scholar, punctual term after term, growing up to be a man heedless of his engagments, idle, negligent or shiftless. These habits are implanted most frequently very early in life, and often perhaps by parents themselves. They want the children once in a while for their assistance; then the children in their turn want an hour or a day for recreation, which such a parent can hardly refuse. Thus by little and little the golden habit of prompt-

ness, of punctuality, is destroyed, and with it, very likely, all symmetry of the child's character.

So important does this point appear to the writer, that it see the chief element of success in a school to secure punctuality a continued attendance. Parents must know that whatever the far or neglect of teachers or authorities, this responsibility is placed chie on them. And they must know, also, that nearly the whole pens for non-attendance must be borne by their children. The teac may be in fault, but if you allow your child to be absent, that childnes is the principal sufferer. Alas for the parent who will not satisfice a feeling, an opinion for the good of his child, or who is so be as to think it best for that child to be allowed, for any cause with his control, to leave school towards the close of a term, or occasional for a day or an hour!

School Committee.—Gustavus B. Williams, Superintendent. David Adams, Cal Butler, John R. Hayward, Ezekirl P. Gaskill, Linus B. Stapes, Edward H. T

# MILFORD.

Education.—The advantages of education are not merely the ble results of knowledge, as an aid of money-getting in spe mechanical, mercantile or professional ways. But its best results those which are invisible, in the culture of the faculties, and the sons of self-control which it imparts. He who is systematically tau in any branch of learning is not only qualified for the practical w to which it may be directly applied, but is also prepared for of attainments and for other duties. The young woman, who has many years been devoting a part of each day to practice upon pianoforte, has not only obtained instrumental skill, but lesson self-control invaluable, which will affect her whole future life. ' cares of the family and the household, when she shall have b married, may oblige her to omit her old and familiar practice. Re ness and skill of execution may diminish by neglect; but the wor will never lose the influence of the self-control and the defi purpose developed by her youthful exercises.

The moral influences of education justify the largest expenditure labor and of treasure. With the tools it furnishes it imparts a post and a habit of self-control and of subordination to needful law, where we will go far to make it the safeguard and the hope of an improved civil tion. It is not final in this regard. There are instances of moral ruption, along with refined aesthetic and scientific and literary cultivations principle is necessary to develop the highest style of much that the observation of the philanthropist satisfies him that

thorough discipline and instruction of youth have much to do with the peace and good order and virtue of the community.

In order that a pupil shall receive these best influences, he ought at least to take the course of our schools, requiring twelve years, from five or six to seventeen or eighteen years of age. If it is said that it is a long time to spend at getting an education, we would reply that the education cannot be obtained in so short a time. That requires a life—an eternity. At school, we propose to lay a sure foundation upon which the edifice of culture is to be built. We endeavor to impart many things for practical purposes directly and immediately useful, especially the science of numbers and facility and correctness of verbal expression. But our course of study aims also to develop mental faculty and capacity, and to prepare youth not only for business, but for manhood and womanhood. And our teachers measurably fail, if they do not, in addition to promoting the refinement which comes from familiarity with science and literature, finally succeed in provoking the habit and strengthening the power of thinking.

We provide good schools, which are yearly improving in efficiency and usefulness; but they are nothing unless the children attend regularly. We call attention to the following facts:—

- 1. In a populous town like Milford, the schools must be graded,—an advantage as well as a necessity.
- 2. In graded schools, a course of study is needful for regular instruction and progress.
- 3. In such schools, it is useless or almost so, for scholars to attend but a small part of the year. For acquiring any knowledge, say, of arithmetic, an attendance during the year with some regularity is a necessity.

In illustration of the last fact, we call attention to the circumstances of the lowest and most numerous grade of the Grammar Schools. For the fall term is prescribed notation and addition; for the winter term, subtraction and multiplication; for the spring term, division. Suppose a child does not enter at the first term, or is absent during the second term; he cannot possibly go on with the study, for want of preparation. Nor can we abandon those who have been in regular attendance, to bring up those who have been absent. As our schools are necessarily organized, they are of no avail to those who are sent to them but a part of the year. And their success is much hindered by the numerous daily absences of those whose names are enrolled. Let parents think of the loss to which their children are subjected when required or permitted to remain out of school.

The laws demand the attendance at school of every child between

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the ages of five and fifteen, at least three months in the year. statute was adapted to the old district system. Such an attenda is practically useless in any of our manufacturing towns. A be rule would be that adopted in Boston for the newsboys and sl blacks. These occupations cannot be pursued without a lice conditioned upon regular attendance at school for one or two ho each school-day. That is one issue out of the difficulty. We can nothing for a boy or girl one term in a year. Much may be don one hour and a half each day; far more in the half of each day. ' school committee will gladly arrange for such an attendance for the whose labor is deemed needful to the family. Regularity is all-im-

Another remedy might be found in providing an ungraded scl for such children as for any reason are unable to proceed with regular course. Such a school would demand a principal of exp ence and capability; and as we have now the necessary room, matter is suggested to the new committee. Something should done, if possible, to rescue from street influences and utilize the br power of over one-fourth of our juvenile population, now neglect of schools.

School Committee.—C. J. THOMPSON, G. L. DEMAREST, M. J. C. RUSSELL, T. W. I LEY, H. H. BOWERS.

# MILLBURY.

Drawing and Writing.—In conformity with the provisions of statute of last winter, the committee introduced the study of draw into our schools, early in the summer term. In the Primary and S Primary Schools, drawing slates were made use of and the result been satisfactory to the committee. In these schools it is not des ble and ought not to be expected that the scholars will devote ev moment of time to their studies. They must have relief, and is much better that that relief should come from some innocent am ment than from mischievous play, and it has been found that scholars have been so interested in their drawing lessons, that m of the difficulty of government has been removed. Besides this is rect benefit, commendable proficiency has been attained in the and the first steps in penmanship have been taken at an earlier st than formerly. In the Grammar and Intermediate Schools the dr ing book has been used. Some misapprehension arose in the comnity as to the right of the committee to introduce this study, some opposition from parents was encountered, partly because of expense attending it, but mainly from a failure on their part to see utility. But the question of utility was not open to us; that was passed upon by the legislature. Nevertheless, we would suggest that that art which induces, and that science which inculcates painstaking, patient and persistent effort, must be useful.

For the Committee.-JOHN HOPKINS, Chairman.

#### NORTHBRIDGE.

With good houses, there must be well qualified teachers; in this respect we have been quite as successful as in former years—the character of each school depending upon the various local influences as well as the individual characteristics of the teachers. Seven of the teachers employed have been educated in our Normal Schools, and fully sustain the reputation which they have acquired. Some of our schools have been taught by trained teachers for several years, and the excellent result of their teaching is too apparent to need any comment from us.

We are not among those who think that no good teachers can be made outside of these schools, or that all who obtain their diploma must of course be successful teachers. In our large Graded and Ungraded Schools of fifty or sixty scholars, it requires, first of all, a teacher of great energy, both physical and mental, for the pupils under their charge to make any satisfactory progress. We have teachers of this class who are not graduates of a Normal School, and whose places it would be difficult to fill. The general reputation of teachers depends more upon their ability to govern, and the good order they maintain, than upon their skill as teachers.

School Committee.—R. R. Clarke, Chas. O. Bachelor, George Benson, J. Lasell, H. Goodell, William Whitin.

# NORTH BROOKFIELD.

We ask of you, and urge upon you, to appreciate the fact that your schools can never supply the lack of home discipline; can never render submissive and order-loving those to whom the propriety and beauty of these virtues are unknown; that the influences of the most gifted instructors even, during the few hours daily devoted to attendance upon school duties, should be expected to have greater weight with your children than continued home influence, is unreasonable. Parents must heartily cooperate with teachers if the good work of education is to progress, and the expenditure of money, labor and time to find vindication in the general intelligence and virtue of the community. It is worse than vain to expect "brick without straw";

let school instruction be supplemented by home training; let the teacher receive the additional strength parental indorsement can give, and disorderly schools are impossibilities, relics of the dark ages, chimeras. Withhold this merely, and you mar your schools by taking from their efficiency; by uttering words of detraction of the teacher at home or in public, you strike blows at the life of your schools by inculcating a spirit of insubordination and disorder as surely as the effect follows its moving cause.

Your teachers have been instructed that expulsion from the privileges of school, as a punishment, is against the policy of the system, and cases in which this action has been found the only resort are rare; in those instances in which it has been employed, the course of the teacher has been found, after careful investigation, to have been entirely justifiable as essential to the maintenance of authority necessary to the successful administration of the school.

A few remarks touching the matter of the exclusion of children from the Public Schools, may perhaps be not ill-timed if indeed they be not especially appropriate and necessary. It is obvious that the schools of the town are established and maintained for the benefit of all the inhabitants. The enjoyment of this benefit then is a common not a personal right, and, like other common rights, one to be enjoyed under such restrictions and qualifications as that it shall not interfere with the equal, co-extensive rights of others. It will be admitted, or at least it cannot be denied, that for misconduct in school and disobedience to reasonable regulations a pupil may be excluded—yet there is no express provision of law authorizing such exclusion; it results by necessary implication from legal provisions requiring school discipline, and proves that the right of attendance is not an absolute and unqualified right, but one to be enjoyed only under reasonable conditions. And by further implication the duty of deciding these issues is cast upon some one. We think it rests upon the town's committee. In some respects the duties of this committee are defined by statute; in others they result from the responsibility of general superintend-They are required to see that as far as may be the minds of the children are impressed with the principles of piety and justice, a sacred regard to truth, love of their country, humanity and universal benevolence, sobriety, industry and all those virtues which are the ornaments of human society. It may be said that the statute enactment making this enumeration, though commending itself to every man's judgment as right and proper, affords no practical rule which can have the force of law. It does not, indeed, prescribe any practical rule upon which any legal action could be founded. What then is the force of an enumeration of moral duties among statute enact-

ments? It furnishes a light where they are obscure, and a signification where general or indefinite. In the light afforded by these means of exposition your committee deem it clear that your legislators intended the Public Schools to be at the same time seminaries of learning and a system of moral training. If such is the purpose of their organization and support, it becomes the plain duty of those to whom the direction of the schools is delegated, to guard with zealous care that the youth in membership be protected from contaminating influences, and to preserve pure-minded and ingenuous unsuspecting and susceptible childhood, by removing the incorrigibly obstinate and turbulent offender, even though no offence known to the criminal code be committed. Nor can it, in any right view of their obligations, be incumbent upon the committee to lodge any offender whom they may have excluded from a school in State institutions. Supposing such to be the proper disposition to be made of an offender, we are not convinced that this fact argues any peculiar fitness for his membership in a Public School.

A pure and worthy character is as essential to success in life as are mere intellectual triumphs. Let the teacher impress this fact upon the mind of the scholar, and render the school-room an arena for the achievement of moral as well as intellectual victories.

Important as are the reasonable rules and instructions of the teacher in securing a healthy tone in the school-room, there is another and still more potent influence. We refer to the teacher's real character as evidenced by his daily walk and conversation. It is his unconscious influence, his spontaneous words and acts which form the paramount moral tone and determine the character of the school. It is a force no hypocrisy can control, no simulation effectually disguise. It behooves, therefore, the teacher most carefully to consider what manner of man he be.

The mind of childhood naturally comprehends only isolated facts; it deduces principles from known facts but slowly. It follows then that care should be taken while following the natural order of the unfolding of the child's intellect, to lead up the mind to an apprehension of general principles. Much injury is done by teachers who rest satisfied with presenting and leaving a topic of study in its isolated and hence barren form. The temple can never arise in perfection, strength and beauty, unless the would-be builder can harmoniously dispose and fitly joint together its various parts, from turret to foundation stone. Constant watchfulness is needed that no impropriety of speech pass unnoticed and uncorrected. No remark should be permitted in the school-room which offends the rules of grammar. No amount of effort in after-life can entirely correct habits of this

kind formed and grown strong in early life. Every exercise of the school-room should be an exercise in the proper use of language, habituating the child to accurate and precise form of statement and elegance of expression. Every question should be clear and precise, every answer a correctly constructed proposition.

We subjoin a copy of the truant regulations adopted by the town and approved by the superior court, for the consideration and guidance of those whom it may concern:—

- SECTION 1. All habitual truants and children wandering about the streets or public places of said town of North Brookfield, having no lawful occupation or business, not attending school and growing up in ignorance, between the ages of seven and sixteen years and residents of said town, shall, upon their names becoming known to the truant committee of said town, be required to attend such of the Public Schools of said town and for so long a time as shall be designated by said committee.
- SECT. 2. It shall be the duty of said truant committee, on learning that any child between the ages of seven and sixteen years is a habitual truant, or is in the habit of wandering about the streets or public places of said town, having no lawful occupation or business, not attending school and growing up in ignorance, and residing in said town, to give notice in writing to the parents or guardian of such child, if there be any residing in said town, stating what school said child is required to attend and for what length of time.
- SECT. 3. Any child between the ages mentioned in the preceding sections and residing in said town, neglecting, without good cause shown, to attend the school designated for him or her, as provided in said sections, or any such child having no parent or guardian residing in said town, shall, upon conviction of being a habitual truant, or of wandering about the streets or public places of said town, having no lawful occupation or business, not attending school and growing up in ignorance, be committed to the almshouse in said town for a term not exceeding two years, or pay a fine not exceeding twenty dollars to the use of said town, with costs of prosecution, to be recovered on complaint before any trial justice for the county of Worcester.
- SECT. 4. The fees in all cases arising under these by-laws shall be taxed and allowed as in other criminal prosecutions and paid from the town treasury if not recovered of and paid by the defendents in such cases.
- SECT. 5. It shall be the duty of the constables and the teachers of the Public Schools of said town to report to the truant committee the names of all children between the ages of seven and sixteen years known or believed by them to be guilty of any of the offences named in section three of these by-laws.

For the Committee.-ROBT. E. BERCHER.

#### PAXTON.

Your committee, for a series of years, have recommended a concentration of your energies and money upon fewer schools, but this idea seems not to meet the approbation of the town. The town has seemed pleased with the next best plan, that is, to make the schools outside of the Centre, Primary Schools, for the larger scholars did not attend these schools, but waited until the school in the Centre commenced, and then wished the privilege of attending school here; but this was not pleasing to all interested, and the result is that quite a number of scholars in town have not attended school at all, who would have been glad of the privilege.

Now, in our opinion, just what you ought to demand, is a good school in the centre of the town, for six months in the year, at least; and that all the larger scholars in town, who wish, should have the privilege of attending school here.

A New Study.—The study of drawing has been introduced into our schools the present year. Now it may be said, what is the use of drawing in our schools? Do you expect every one to learn to draw? It is supposed by many that in order to succeed in this study one must have a special gift, or aptitude for it; but experience has abundantly demonstrated that where it has been properly taught, success is as certain and as universal as in any branch of study. One is not born with the ability to draw, any more than one is born with the ability to write. The ability to draw depends upon an intelligent comprehension of the laws which govern representation, and upon a disciplined and educated eye, and a trained hand. We expect it will be of great use in assisting scholars in learning to write, for it is witnessed by a great many where drawing has been introduced how much faster and easier scholars learn to write.

The first good result is, as we have said, in writing. The next in assisting scholars to learn geography, by helping them to draw maps. Geography is made much more interesting to beginners when they can go to the board and draw a map of their own, of the lines or the country they are describing; and it allows the teacher to address more than one faculty. In the recitation the eye and hand are addressed, as well as the ear, and it is to be noticed with what wonderful facility and rapidity pupils with only a short time in practice will place a map on the board. We can see the good results of this study thus immediately in Primary departments. But, it is said, drawing should be taught in all grades of our Common Schools, because it gives clearness and vigor to the perceptive faculties, and opens the blind eyes to the beauties of nature and art which lie about us in such abundant profusion, but which those without some slight knowledge of this art are wholly unconscious of; and even the richest scenes that nature presents us in all its charms are plain and commonplace.

There is a superabundant Goodness that has created the beautiful, and that this beauty might be enjoyed, has given us eyes to see and powers to appreciate, but has made this power dependent upon cultivation. If there were no other advantages to be derived from this study, only enabling the scholar to see and appreciate the beautiful, and thereby tending to the improvement in taste and refinement of manners and grace which are so much needed in the school-room, it would amply pay for all the time and exertion given to the study. How useful even the most meagre and trifling knowledge of this art has been in making our ideas perfectly intelligible to others—to an architect, carpenter, mason or machinist—is apparent to all, and preeminently so to the man who has occasion to employ any of these men. And if we are to teach our scholars what they are expected to practise when they come to act for themselves, what better can we do than to place drawing alongside of the other fundamental studies -of reading, writing and ciphering.

For the Committee .- H. W. HUBBARD, M. A. BOYNTON, LEVI SMITH.

# SOUTHBRIDGE.

Many of our most respected citizens can more easily discern the need of outlay to improve streets and sidewalks than they can to improve our inconvenient and inadequate school-houses and their meagre appurtenances. The material is rated higher than the intellectual. It is nearly useless to discuss the respective merics of different theoretic modes of education, so long as this insurmountable obstacle exists. "Unto whomsoever much is given, of them shall much be required." The one thing that more than all others is required of us to-day, is a liberal outlay on our schools. Roads, bridges and magnificent brick blocks are indispensable in their way, but as means and instruments they subserve an essentially lower and more temporary end than facilities for the general culture of the young in science, literature and taste. Has not the time arrived when it is becoming to act liberally in this cause? Our community are materially prosperous. We have been blessed in basket and store. We are not poor, and yet the inside of many of our school-rooms presents the aspect of absolute poverty, and there is not a school-room in town that does not need something involving expense.

Teachers' Meetings.—The experience of another year has strengthened our conviction of the importance of monthly meetings of teachers. The benefits reflected from these meetings in the increased energy and deepened enthusiasm of the teachers is unmistakable. Though the regulations of the committee compel the attendance of

he teachers at these meetings, still it is not felt by them to be a task—as is often the case in other towns. The meetings are contemplated y the teachers with anticipations of pleasure. The direct instruction imparted, the conference of views, and, frequently, the pleasant onflict of opinions on subjects pertaining to schools and teaching, re the cause of cheerfulness and elasticity of spirits in the teachers, which are obviously beneficial.

Supervision of Schools.—We reiterate the views expressed in our ast annual report concerning the desirableness of a superintendent for our schools. More and better supervision is needed. Some of our chools during the past year have had little or no supervision by the ommittee. To insure the number of visits which the law requires, he schools have been allotted as usual among the members of the ommittee; yet some have failed to perform this duty. Such neglects of duty are liable to occur when members of the committee are aborbed, as most of them are, in their private vocations. But even when this is not the case, complete unity of aim and action cannot be nsured, except when the superintendence is entrusted to a single and. School supervision should be made a study and a profession, s well as teaching. A general system of development can be best nstituted and a common enthusiasm more surely imparted by a superintendent. We therefore believe that the supervision of our chools should devolve upon one superintendent, and not as now upon ix.

School Committee.—F. C. FLINT, B. F. BRONSON, MANNING LEOBARD, J. O. MCKINTRY, A. J. BARTHOLOMEW, L. W. CURTIS.

#### TEMPLETON.

At the last April meeting the town adopted the following by-laws oncerning truant children and absentees from school, and chose necssary officers to enforce the same:—

#### COMMONWEALTH OF MASSACHUSETTS.

Worcester, ss.

At the Superior Court, begun and holden at Fitchburg, within and for the County of Worcester, on the second Monday of June, being the thirteenth day of said month, in the year of our Lord one thousand eight hundred and seventy, by the Honorable CHARLES DEVENS, Jr., one of the Justices of said Court.

By-laws concerning Truant Children and Absentees from School.

ARTICLE 1. Any person convicted of any offence described in the 207th hapter of the acts of 1862 and the several acts in addition thereto or in mendment thereof, or either of them, shall be punished with a fine not exceed-

ing twenty dollars or by confinement in any institution of instruction, house of reformation, or suitable situation which shall be provided for the purpose, for a term not exceeding two years.

- ART. 2. Any child between the ages of seven and sixteen who, while a member of any school, shall absent himself or herself from school without the consent of his or her teacher, parent or guardian, shall be deemed a truant.
- ART. 3. Any child between the ages of six and fifteen, who shall not attend some Public School or suitable institution of instruction at least twelve weeks in a year, six of which shall be consecutive, shall be deemed an absentee.
- ART. 4. Children between the ages of seven and sixteen years, wandering in the streets, or loitering in stores, shops and public places, having no lawful occupation and growing up in ignorance, are hereby placed under the supervision of the truant officers, as far as the law allows, subject to the penalties described in article 1.
- ART. 5. The town shall annually choose four or more truant officers, whose duty it shall be to make complaints, in case of violation of these by-laws, for the purpose of carrying into execution the sentence thereof, who shall receive such compensation for their services as the selectmen shall determine.
- ART. 6. It shall be the duty of every truant officer to inquire diligently concerning all persons, between the ages aforesaid, who shall seem to be idle or vagrant, or who, whether employed or unemployed, appear to be growing up in ignorance, and enter a complaint against any one found unlawfully absent from school or violating any of these laws.
- ART. 7. It shall be the duty of every truant officer, prior to making any complaint before a justice, to notify the truant or absentee child and its parent or guardian, of the penalty for the offence. If he can obtain satisfactory pledges of reformation, which pledges shall be subsequently kept, he shall forbear to prosecute.

Voted and adopted by the Town of Templeton, at a legal meeting holden April 9th, 1870.

Attest:

GERARD BUSHNELL, Town Clerk.

The foregoing by-laws of the Town of Templeton, being presented to the Court at the present term, are approved.

Attest:

A true copy of record. Attest:

JOSEPH MASON, Clerk. JOSEPH MASON, Clerk.

School-houses.—While much remains to be done to our school-houses and grounds surroundings, the committee take great pleasure in saying that the school-rooms in every district present an inviting and cheerful aspect. Many of them have been newly papered and painted: in one new and tidy seats have taken the place of the old disfigured benches. Each room that was not previously supplied has been furnished with outline maps and globe. The blackboards have been put in good condition and to a great extent used. Some object to these things as useless expense, because they are so quickly destroyed. It is time that our scholars give up such habits. Let the teacher insist that

when an article is destroyed the scholar shall replace it, then susain him in enforcing the rule. We spend much to beautify our couses. If useful furniture is worn out or destroyed it is quickly replaced. Our churches are softly carpeted and cushioned. Next to some and the sanctuary our children should love the school-room. Why not, then, in a proper way, make them as attractive?

School Committee.-P. BLODGETT, F. LELAND, J. B. GOULD.

# UPTON.

It must be apparent to all that a teacher's vocation is one of great worth to the community, as well as of great responsibility. Though he success of our schools depends not alone on their ability and power, yet, unless the teacher is properly qualified and gifted, the work will fail, even if all the other influences which affect the character of the school are right. Sir Wm. Hamilton declared that "instrucion is the most popular and the most difficult of arts." It is an art. In this, as in other departments of art, the teachers' success will be n proportion to their gift to teach. But no teacher, however gifted, can teach unless having thorough culture. Many of our teachers do not instruct, but merely hear the pupils recite. But the thorough culture needed costs in both time and money. The compensation should be such as to induce them to thus prepare themselves. Let is avoid merely cheap teachers; demand of all higher qualifications; then, if they have a love for the calling and enthusiasm, you will see he standard of our school rising. This progress is the absolute need of our schools. The unconscious teaching of a true example—winning nanners and proper language—is often the greatest power a teacher exerts. Let us see to it that this is with us on the side of better schools,

Superintending School Committee .- GEORGE S. BALL, HORACE FORBUSH.

# UXBRIDGE.

What farmer would think of employing a man to labor for him in preparing the ground for his crops, without seeing that he was provided with a suitable team, plough and other implements for breaking up the sod? And certainly he would not employ a man for that purpose if he had no land to prepare. Or what manufacturer would employ a skilful superintendent without seeing that machinery and stock and laborers were provided over which to exercise his skill and supervision?

And neither of these acts would be more absurd than to employ teachers for your children, and not have your children in the schoolroom more than two-thirds of the time. Think for a moment what ideas would pass through your minds if some one in your employ should labor for four days in the week, and yet ask pay for six days' work! And yet this is just what your teachers, in some instances, have been doing the past year; and this, without any fault on their part, but for the reason that the children were not at school at all for days in succession, or have come in late, disturbing the school and hindering those who would improve from the progress they would otherwise have made.

We commend this subject of true teaching to all who take upon themselves the responsible position of teacher. Make yourselves thoroughly acquainted with the subject you have to teach, before you attempt to make your pupils acquainted with it; and, above all, try to ascertain the real difficulty in the mind of your pupil, before you try to remove it. Do not insist that the pupil shall use your set formula to express the idea or truth you are trying to teach him, or to ascertain if he knows; but insist that he shall first express it in his own language; and then, if his language is poor, show him how to put his ideas into proper form. Do not be too quick to show how the thing is to be done; it may be easier for the teacher to do so. The boy who grows up without proper exercise of his powers gains no strength for manhood, and the scholar who is assisted to all he accomplishes by his teacher, is almost sure to fail when put to the test of relying on himself alone.

Two things should specially be required,—accuracy and rapidity. Without accuracy, all business transactions in life will be failures. Without rapidity, the steam and lightning of the present day will leave one so far behind that he might as well not be at all.

To secure these, frequent reviews are necessary; and let written examinations be made and preserved, at least once in two or three weeks, testing the scholar in what he has been over.

The subject of spelling has attracted much attention in all our schools for some years past, and in the High School special attention is given it, as well as in the other schools; and we have found more good spelling in the schools generally, the past year, than has been witnessed for many years.

In one of our schools there was a class of eight, whose regular exercise in spelling was to write twenty-five words daily, four days in the week, on the blackboard; at the end of the term they had spelled twelve hundred words, and missed nine, no member of the class having missed more than two words. Other classes may have done as well as this, but as no record has been kept we have no knowledge of it.

Chairman of School Committee.—C. A. WHERLOCK. Secretary.—C. A. TAFT.

# WARREN.

Normal Schools.—Experience has shown that these schools are ag a good work. Graduates from these schools are eagerly sought r; and they command a higher compensation, as a general rule, a those who have not had the advantages which they furnish.

Ve do not mean by this that there are no good teachers outside graduates of Normal Schools; or that Normal Schools make d teachers of all their pupils. But we do mean that if a person a fair share of those qualities which are needful in a teacher, a smal School training will help them to a success which they would be likely to reach without it.

delection of Teachers.—With the convictions just expressed, we esought to introduce Normal teachers into our schools. This has betimes been done to the exclusion of home applicants. We all be glad if we had home talent enough of the right kind for all schools, and hope, as the fruits of our High School continue to an, we shall. But until those of our young people who wish to che shall not simply acquire a knowledge of the common branches, shall also acquaint themselves somewhat with the best methods teaching, they must not expect to be put into our large and difficulties chools.

Qualification of Teachers.—In this matter of the qualification of chers, we are even now far behind some of the old countries ch we sometimes vainly think we have outgrown. In the Northman States, for instance, teachers must graduate from a Normal titution, pass a rigid examination, and then teach three years on bation, before receiving a final certificate. Wurtemburg requires t notice of an intention to teach shall be given; then follow two rs of preparation for a Normal course, which consumes three years e. Then two years must be spent as an assistant in an approved plic School, after which, if the candidate passes a final examination, nay be admitted to the honor of teaching a Primary School, and consider himself in the line of promotion. But a great many our people think that almost anybody can teach a Primary School! dently we need a more enlightened estimate of what constitutes a d teacher before we can hope for any great degree of perfection ur Common Schools.

School Committee.—J. H. Moore, J. W. Hastings, George M. Newton.

# WEST BOYLSTON.

Order in school is an absolute necessity. The only question is how to obtain and maintain it. And all parties are interested in its solution, and in the attainment of this end in the best way. The teacher and every scholar, and every parent and guardian whose children are educated in our schools, as well as the school committee, and all parties are under the highest obligation, not only to know how, but to contribute also to the accomplishment of the fact of good order in school.

First, then, let the teacher go into the school with the understanding that she will be sustained by the committee and by the parents and guardians of the children. This will give her confidence and courage. Let her have some definite view of her own of what it is needful to require of her pupils. And whatever is needful, let her insist upon with firmness. Let her assume and maintain a dignity and reserve which shall command respect. Not a formal and affected dignity, but let her feel her superiority and ability to govern and to teach; for frivolity will beget contempt even in children. same time let her approach the children with that frankness and friendliness of demeanor and expression which shall gain their confidence and esteem. Let her convince them by all means that she is their friend, and is toiling for their good. This may all be done without any abatement of true dignity or loss of respect. Let her be strictly just and impartial in the administration of her government and in imparting instruction. In the nature of things, she will love some scholars more than others; but never should she be guilty of injustice or neglect in school to those loved least. Let the teacher observe these things, and if she is capable of loving and making herself lovable, an affection will spring up between herself and her charge which will insure obedience and great success, and the use of the rod and the ferrule, and the motive of fear which they inspire, will be needless and forgotten. A reverential fear, a fear to do wrong, will supersede it; conscience itself will be aroused and made to do its legitimate work; the children will be taught to govern themselves, and self-government is the great duty of life.

Our schools are considerably in advance of what they were ten years ago. A more extensive, thorough and practical attainment of the sciences taught and the facilities for the attainment of knowledge are much better to-day than ever before. Since the abolishment of the district system the town has put its school-houses in a condition of convenience, comfort and good taste, which is worthy of much praise and

tulation. It has constructed four houses, with two departments each, and one with a single department, and all with modern provements of seating, lighting, warming and ventilation, and also ha room in the basement of each, where the children can take ir physical exercise and play during the moments of recess and the ermission, when the weather does not permit them to enjoy these the open air. These improvements made within the last few years, we cost the town many thousand dollars; and this "bread" cast on the waters of intellectual improvement will surely yield us a mary thousand.

Our school-books are also much better than formerly, being better pted to the wants of the learners, making the facts of science arer, more intelligible and practical; and usually we are able to ain teachers who are up even with other improvements.

Yet there is an evil in regard to books which should be noticed. It want of uniformity in our text-books is a great hindrance to id progress in education. It multiplies classes, hinders, confuses to obstructs the whole process of learning.

Secretary.-D. R. LAMSON.

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# WORCESTER.

The Training School has graduated twenty-nine teachers who now successfully engaged in the Primary Schools of the city. At present, eight young ladies are in training there, all graduates of High School. The success of those who have enjoyed the advances of this school, both in obtaining situations and in filling them, ald seem a strong inducement for those wishing to become teachers avail themselves of its privileges. But the school could accommode a class twice as large.

I'wo causes seem to unite in keeping this school small. In the place those who have completed a course of study which qualifies m to enter here, are unwilling to spend a year more in specific paration for the work of teaching. They desire present employant.

on the second place, some may prefer teaching in a grade other than one for which, especially, this school prepares them; and all see two cannot always employ all the Primary teachers who might be cated in that school. A school of this character, to meet our its should not be limited to a single grade of teachers, though this he most important; its supply should not be drawn from a single; its influence should not be confined, nor should its graduates of for employment to one place.

Mechanical and Industrial Drawing School.—This is the first school of the kind established under the law of May 16, 1870. The subject was referred to a special committee early in June. Their conclusions and recommendations, which were adopted, are embodied in the following:—

# To the Mayor and School Board of Worcester:

The special committee, appointed June 5th, to consider the recommendation for opening a Drawing School for adults, submit the following report:

At the recent session of the General Court, a law was enacted, the first section of which includes drawing among the studies required to be taught in the Public Schools; the second section directs that every city and town having more than ten thousand inhabitants shall, annually, make provision for giving free instruction in industrial and mechanical drawing to persons over fifteen years of age, &c.

The instruction now given in the Public Schools includes drawing, in compiance with the first section of this law; and it is gratifying to know, that we were in advance of the public opinion of the State, so far as to be only the second city to adopt this, as a regular branch of study, and thus to anticipate the above legislation which affirms its importance.

The second section obliges towns and cities of the size of ours to provide in the instruction contemplated; but the character and extent of that instruction must, of course, depend upon the wish of the school committee, under whom direction it is to be given.

Industrial or mechanical drawing means, that which is of use in any of the industries of life; and to be of use, it must be simple and practical; but it can be neither simple nor practical, unless it is thorough and scientific. It is the opinion of your committee, therefore, that no instruction ought to be provided for, which is not of this character. And we believe that there are three requisites for such instruction, viz: free-hand drawing, which gives control of the muscles, and educates the hand to obey the will more perfectly; some knowledge of geometric forms and figures which enables one to see in a drawing, merely a combination of lines and angles, but the elevations and depressors the surfaces, edges and corners represented; and lastly, practice in drawing from objects themselves, by which one is enabled to make the real form appear, and stand out, as it were, upon the flat paper.

In a course of this kind not less than thirty lessons are required: five in free hand drawing alone; five more to alternate with lessons in geometric form and the remaining fifteen in drawing from objects and mechanical drawing. This proportion may vary with different classes, and can best be fixed by the teachers.

This course of instruction may be to some extent complete in itself, so as to be valuable if carried no farther; and yet the course next year, if the school's continued, may go on from the point where this terminates.

To bring this matter before the board in definite form for action, your committee submit the following:—

Resolved, That the superintendent of schools be requested to engage Boynton ll, and to secure the services of Profs. Gladwin and Alden, for a school of ustrial and mechanical drawing, upon the plan set forth in the foregoing ort.

That he cause notices of the proposed school to be published in the daily pers, setting forth its purpose and inviting application for admission to be de at his office.

That, from these applicants, he admit as many as the school will accommodate, king such discrimination as he, in connection with a committee appointed for purpose, may deem best; and

That he open the school October 15th, provided not less than twenty appli-

ts be received.

GEORGE W. GALE,
R. N. MERIAM,
D. S. GODDARD,

Committee.

ITY HALL, Sept. 29, 1870.

In accordance with the above resolves applications were received the superintendent's office; and instead of the twenty, thought bessary to warrant proceding with the enterprise, in about one ek, more than two hundred had applied. So large a number had been provided for; but on examining the list it was found that he could reasonably be excluded except pupils from the day schools, whom instruction is already provided. Omitting these, and such were in any way deterred from entering the school, there remained is,—136 men and 9 women. These were organized into two classes free-hand drawing, each meeting two evenings a week. After se classes were opened, many others applied for admission; but or some progress had been made, beginners could not so profitably numence; the classes were full; the enterprise was new; the strength the teachers limited; it was not thought best therefore to open a rd class.

In respect of age there were forty-nine under 20, sixty-one between and 30, twenty-eight between 30 and 40, four between 40 and 50, to between 50 and 60, and one over 60. In respect of occupation re were machinists 42; carpenters 26; pattern makers 7; teachers masons 3; farmers, boot and shoe makers, clerks and architects 4 th; organ builders, book-keepers, painters, armorers and engravers each; insurance agents, civil engineers, reed makers, engineers, noisterers, moulders, wire drawers, blacksmiths 1 each; miscellatous, 24. Since the class started very few have dropped out. More in half the class walk two miles to get the lessons, and more than 5-thirds of them are in their seats half an hour before the time of ginning. Only five of them have ever been in a drawing class fore, though voluntary classes have been held in the city for years."

Upon the completion of the ten lessons in free-hand drawing by Prof. Gladwin contemplated by the committee, it was found that about one-third of the class wished to continue them. The remaining numbers could not be taught mechanical drawing in a single class. Mr. Higgins, superintendent of the Washburn machine shop, was therefore engaged for the second class, Prof. Alden taking the other. A pupil of the Institute has assisted in both.

The course of introductory instruction in free-hand is as follows:—
"Three lessons in horizontal and vertical lines, and plain and ornsmental forms composed of those lines. Three lessons in curves. Two lessons in perspective. Two lessons in review.

"For the first course of twenty lessons in mechanical drawing a good part of the time, say three-fourths, is spent in learning the elements of descriptive geometry. Descriptive geometry is mechanical drawing in one sense; that is, it is the method of representing any object in horizontal and vertical projection, in any position. A knowledge of geometry proper is of incalculable value as a preliminary, but is not indispensable. The problems to be given must be selected with great care; and the aid of a blackboard, so contrived as to show the two planes, is of great importance. The remaining lessons may be devoted to simple or complicated problems in construction, according to the proficiency of each pupil. It will be observed that this method of instruction differs widely from the one usually followed in classes connected with our voluntary organizations. That plan is to give the pupil certain arbitrary rules for producing certain results, and pupils are generally allowed to choose their own studies. This plan contemplates the mastery of the great principles of projection. So that the pupil can delineate any form he wishes, and put it in any desired position."

All the instruction in these classes is oral. The teacher illustrates with crayon at the board; at first, drawing in advance of the class the figure he wishes them to copy; and, farther on, showing what perspective is by models, cubes, cones, cylinders, spheres and a few other simple forms before the eye, and their representation by lines upon the board. In the mechanical classes the projection of any object upon the vertical and the horizontal plane is shown by a small black-board, hinged in the middle. When placed at right angles the two planes are seen; when open it appears the ordinary surface on which the two planes must be represented. In this simple, practical way, principles are elucidated,—not mystified by abstract definitions.

Each pupil is provided with paper, pencils, rubber, and a simple drawing board only,—except that the mechanical class have a simple

et of instruments: a pair of adjustable dividers, a pen, a scale, a T

The entire cost of these classes, eighty lessons in all, or thirty to

each class, is about \$900; or not far from \$6.00 to each pupil.

To the promptness of this board, to the generosity of the trustees of the Institute, to the ability and enthusiasm of the instructors, and especially to the wise direction and impulse given by Prof. C. O. Phompson, is due the success of this school which is the model of its kind, and which will lead, it is believed, to still further cultivation of a fruitful field.

Teachers.—"Next to the preaching of God's Holy Word, I know of no more Godly purpose that a man goeth about, than the teaching schole." These are the words of Roger Ascham, Preceptor of Queen Elizabeth; and three centuries, though they have modified the spelling of the words, have only made the truth the more apparent. The dignity and importance of this profession is often undervalued or nisunderstood. To the obscure preceptor are due those influences which produced a Shakspeare, and rendered the queen illustrious. Many a man who has filled a large place in history, received the first mpulse from his teachers. No class of persons has a more powerful nfluence upon the nation of the immediate future. It is questionable whether even the exception in the above quotation should be made. The teacher, five or six hours a day five days in the week, with the dvantage of superior age, is moulding the impressible minds of youth, and, whether he will or not, leaving more or less distinctly, upon fifty ninds and characters, the impress of his own. Teachers are a power pehind the throne of public opinion, by which that throne itself is noved. No trump of fame calls to this field of humble yet effective abor. When some heroic action, some discovery in science, or some deed of patriotic valor is heralded through the land, no one thinks of the teachers by whom the virtue was encouraged and the industry timulated by which high attainments become possible. To them, partly, is often due the credit of other men's success, as on them may partly rest the responsibility of others' failure.

To fit one for this high calling, there is need of the most careful preparation and the most conscientious devotion. Yet numbers are anxious to engage in it, not only without professional training, but almost without education; and it is surprising to see how low is the copular standard of what should be required in a teacher, and how ittle the value of the best talent is really appreciated.

The average length of time female teachers continue in the business nere is about four years. Ninety-three per cent. of all our teachers are females. Very likely and properly this per cent. will continue to

be nearly as large. For reasons beyond the control of society and higher than human laws, their time of service will as a rule continue to be short. But frequent change in the corps of teachers is injurious. There should be a conservative element among them,—a class permanently employed.

Statistics show that the proportion of young men engaged in teaching is smaller than it was twenty years ago. But there is an army of agents, urging upon the public that which is not desirable, and of persons courting success in unproductive employments for which they are not qualified. If the men of talent among these would fit themselves to be teachers, and engage in this noble work, they would become useful members of society, and, in elevating humanity, find themselves ennobled and their self-respect restored. The policy which has driven young men from this profession is not good. To retain in it, in sufficient numbers, those whose ability may illustrate its capacity for good, requires a change in the popular estimate of its importance.

Attendance.—The average daily attendance of pupils has been ninety-one per cent. of the average whole number belonging to the schools. During the summer term the small-pox prevailed in the city to an alarming extent; and many children were withdrawn from the schools on that account. This will probably fully explain the decrease of about .007 from the per cent. of last year. But after every allowance has been made for necessary absence, the number of pupils who attend school with no regularity is alarmingly great. There can be no good reason for the constant absence of one pupil from every eleven; or the absence of each scholar one-eleventh of the time. The cost of the schools is the same as if all were present. absences then nearly nine per cent. of this expense is lost. It is not to be expected that there will be no absence. So much absence is needless and should be prevented. By the rules of the school board "Sickness, domestic affliction, and absence from town are regarded as the only legitimate causes of absence or tardiness. All other cases must be considered as in violation of the rule and treated as misdemeanors. Absence from any of the schools for other than the specified causes, amounting in the aggregate to three days during one term, shall subject the pupil to discipline. In every instance of absence or tardiness, a written statement, or personal explanation, shall be required of the parent, master or guardian, on the return of the pupil to school, or at the next session, that the teacher may know whether the cause is legitimate or otherwise."

To enforce this rule, it is generally necessary only to point out to parents and guardians the evils of irregular attendance, both to their

children and to the schools. But if moral means fail, the ultimate remedy is expulsion from school; that is, to cure the evil of occasional absence we compel constant absence. As may well be supposed, such a remedy is applied with great hesitation. For those who wilfully or carelessly detain their children from school, it is worth considering whether some other means should not be used. What right have a few persons thus to defeat almost nine per cent. of the good our schools might accomplish?

The right of a parent to control his own children is admitted on all hands. But that control is limited. He cannot take their lives as he could under the Roman law; he cannot deprive them of food; nor of at least a little education. And so when they are once in school, he is morally bound that their irregularity shall not retard the general progress, and thus infringe upon the rights of others. Those few parents who suppose themselves possessed of the right to detain their children at home any day because, forsooth, they are taxed to support the schools, should be reminded of their duty by some means more effective and more just than to dismiss those children entirely.

Besides irregular pupils there are children under fifteen years of age, who do not even nominally attend school more than one term in a year, if at all. This leads to the question whether it would be right to make attendance compulsory.

As intimated above, other rights are to be considered besides that of the parent over his child. The child himself, every human being, has a right to such a training as will fit him for usefulness and enjoyment, just as he has a right to care, food and raiment in the helpless years of infancy. The parent who abandons an infant may be punished; so should he be punished who neglects the education of his child. The infant would perish. The child in ignorance may live in wretchedness and toil, to curse his parents, and by his blighted life to reproach society, if not by crimes to visit it with retribution for the evil it should have prevented.

Society then has rights. It is of the highest interest to us each, whether our fellow-citizens are intelligent or ignorant. We are all concerned whether in the future our children are to live in an educated community, or in the semi-barbarous state of prevailing ignorance. It is a shame that any intelligent freeman—and no others are free—can stand at the ballot-box and see his vote cancelled by some ragged, unkempt sot, whose leering eye cannot see nor his benighted mind comprehend the printed ballot he casts. Where this is possible, democracy is a sham. To establish firmly republican institutions, such a thing must be made impossible. In self-defence, therefore, and not from benevolence merely, the State has established free

schools. But this defence is not complete, while those who know not the advantages of those schools may desert them. To secure the education of children, the law of this State imposes a fine upon all parents who do not send their children to school at least twelve weeks each year from the age of eight to fourteen years; and another law fixes a penalty upon all persons in whose employ children are found, under twelve years of age, who have not attended school eighteen weeks within the twelve months next preceding such employment, or between twelve and fifteen years of age, who have not attended school eleven weeks during the preceding year.

During the past year a large number of children have been sent to school from the manufacturing establishments of this city; and to the credit of the proprietors be it said, not one of them has failed to comply with the law in its true spirit as soon as they learned its existence. To them it had been unknown. And under the first of these two laws children are in school to-day, who otherwise would be in the street. Not the infliction of the penalty, but the fear of it, keeps them there. To the credit of the city be it said, these unnatural parents number less than a dozen.

One hundred and five weeks at least, or a little more than two and a half school years, the child fifteen years of age, born in this State, must have attended school. This little is important; it may create a thirst for knowledge which will lead to further search; but it is very little, and wholly inadequate, if intelligence is the qualification for citizenship. At this point the State's defence is weak.

The tax-payers also have rights. In the necessity of the State, is found the only justification of taxing citizens to support schools. For the sake of universal education taxes are imposed, which fall most heavily upon the rich, many of whom have few if any children in Pub-"Why must I," one of them may ask, "pay these thousands for schools to which I have no children to send?" "Because," we answer, "your property and life are protected by a government whose corner-stone is popular education; your land is worth more in an intelligent community; you hold that property subject to your duty to society, and a part of this duty is to help educate the children." He may continue, "But my poor neighbor's large family do not attend school; some of them work in the shops, some range about my fields, and some rob my garden and fruit-trees. I am compelled to support schools for all, but not all attend." We enforce the law; eleven weeks the children go to school; again they are at large. Our friend goes on, "I am taxed to support schools for all, nine months in the year; these children attend only three; two-thirds of my tax is extortion." And to this we can make no reply.

Justice to the tax-payer, the safety of the State, and our duty to the hildren demand a law compelling the attendance of all children of chool age, during the whole time when schools are supported at the public expense; allowing, however, private schools to be patronized by those who prefer them, and those of feeble health to be excused. In this logical position the Public-School system must be placed before education will be "universally diffused."

This law would not be the substitution of force for persuasion. It would command only what ninety-nine one hundredths of all good nen are now doing. It would be but the formal expression of what is now the opinion of society, and like the faint approximation to it which we now have, and like all good laws, would operate less by its benalty than by fear of its penalty. And under such a law, many a boor man would find the means of educating his children, who now hinks himself unable to dispense with the small earnings of childish hands, and many a tippler would be compelled to leave his cups.

Superintendent of Public Schools .- ALBERT P. MARBLE.

# Report of the Committee on the Truant School.

Gentlemen of the City Council: The Committee on the Truant School respectfully submit the following report:—

Under the State law, which requires cities and towns to make all needful regulations concerning habitual truants, this school was established at the city farm, by an ordinance of the city in 1863. It was opened in December of that year, and was in charge of a board of truant commissioners. By a change in the law in the year 1867, the care of this school passed into the hands of a committee of the board of overseers of the poor. The expenses of the school which, previously, had been included in the cost of maintaining the poor, have since that time been made a distinct item.

The yearly cost for each boy is about \$170. This outlay accomplishes more than the education and reformation of a single boy; hough when we consider from what he is saved, this seems but a small expense. The fact of truancy implies the absence of proper parental care; and the boy who, when left to himself, forsakes his school, will not fail to receive on the street an education in the school of vice. To save a boy from the consequences of such conduct, is worth more than \$170, and many an instance can be shown of a vicious idle wanderer transformed at this school into a well-behaved and studious boy. But great as the benefit in most cases derived at this school by the pupils themselves is believed to be, this is but a small part of the good it accomplishes. By a wholesome regard for

its restraints, many an idler in inclination and wish is retained in school.

The superintendent of the almshouse has the general care of those sent to this school. He attends to feeding and clothing them, and gives them such liberties about the premises as their conduct entitles them to receive. A teacher assembles them for instruction and study, four hours a day in summer and five hours in winter; and in the teaching reference is had to fitting them for re-entering the Graded Schools.

During the year the truant officer has attended to two thousand four hundred and forty-one cases of absence from school, from unknown causes, reported by the teachers. Of these, eleven hundred and eighty were returned to their schools. One hundred and forty-eight boys inclined to truancy, have been assigned to their schools by the overseers of the poor, which is the first step toward the Truant School. Of these, twenty-eight who persisted in truancy, have been arrested and brought before the municipal court. Eighteen of the number have been sentenced to the Truant School, for terms varying from six months to two years; while the cases of others have been placed on file.

The route to this haven is now pretty well understood by the truants of the city. If absent from school without known and valid excuse, they are reported by the teacher and visited by the truant officer; if this is repeated, they are assigned to the school which they ought to attend by the overseers of the poor; if they continue on the voyage they find themselves safe in this school and away from a like temptation. As seen above, only a small proportion go beyond the first steps.

In the discipline of these boys, corporal punishment is resorted to in cases where it seems necessary. But this means is not relied on wholly. Every one understands that by obedience, punctuality and faithfulness, he may secure many privileges and larger liberty. And the committee have thought that even more may be done in this direction. What these boys need is, a prudent foresight and self-control,—ability to see a great good before them, in the future, and the power to refuse present gratification for the sake of attaining it. Without this, they ran away from school. With it they would have anticipated the rewards of faithful study. It must, then, be developed in them, as far as possible, while here.

For this end, it is proposed to institute a system of rewards by which the boy may, by good conduct, reduce the term of his sentence. Let him feel that a certain period of good behavior and faithful study will release him a week earlier; that a longer continuance in well-

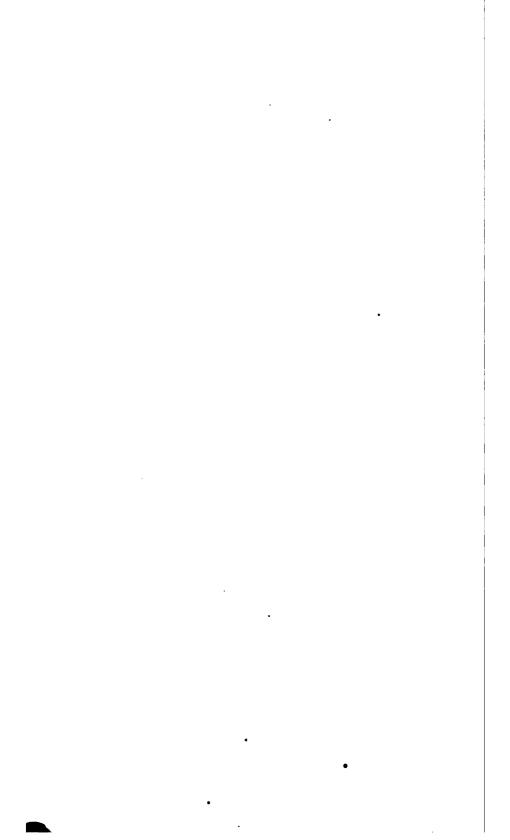
ing will receive a reward still greater in proportion; at the same ne, let his feeble virtue be stimulated by some present advantage, d his impulse to evil be restrained by a wholesome fear of chastiseent or privation, and in this way you fit him to regulate his concet in school and in life; for incentives and restraints similar to see operate upon men in society.

Every year the punitive character of prisons and houses of correcon is being blended more and more with the idea and the hope of formation. In the late address of the governor, we see that State isoners are receiving instruction in Evening Schools, and thus slaythat ignorance which is, to so large an extent, the source of their mes. Such a school as ours is in the van of that movement; for it tempts to dry up the source, and thus prevent crime. One hundred llars here may save the police force a thousand.

This school has accommodations for twenty-four pupils. Only out half that number are there, on an average. More might be complished without much additional outlay. There is a class of venile offenders, brought before the municipal court for offences not a most serious, for whom the punishment must be either fine or prisonment. The fine falls upon parents, who in some cases lament d suffer for what they would gladly prevent. Imprisonment would nish, but might not improve the offender. Moreover, there is no oppriety in sending one boy to the city farm because he will not tend school, and another, no worse than he, and equally in need of struction, to jail where he cannot attend school.

Some provision should be made by which boys guilty of petty ences, no worse in their character than truancy, may be sent to this wool. We doubt not that you, gentlemen, will take such action in direction as may be needful. And in view of this it would seem to the appropriation for this school, though larger than necessary to year, should not be reduced for the present.

Truent School Committee .- ALBERT P. MARBLE, JAMES M. DRENHAN, D. F. PARKER.



# AN ABSTRACT

THE SCHOOL RETURNS MADE BY THE SCHOOL COMMITTEES OF THE SEVERAL TOWNS AND CITIES IN THE COMMONWEALTH, FOR THE SCHOOL-YEAR 1870-71.

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\* The State Valuation of taxable property in 1870 has not yet been completed. † Marshpee District incorporated as the town of Mashpee in 1870.

COUNTY-Continued.
BARNSTABLE

TOWNS.	Length of Schools for r, in Months	sa digned	Average Teachers including of Board.	Wages of per month, the Value	Incinding to the school-	f board, fuel, antarily con- for Public	of Superin- taing brane- strongest for	Superintend- al'do8 olida	chool Funda, me of which me of which appropriated the support bna seline	from Local	f Funds, ap- ed to Public est the option own, includ- on dogs.
	the year	A verage returned mittee.	Males.	Females.		£0., ¥01	onebast		Am't of 8 of 8 of 1 of 1 of 1 of 1 of 1 of 1	Income Behool I	propriat Schools
Barnstable.	203.5	l				00 068		1	<b>8</b> 2.000 00	\$132 80	•
Brewster.	. 52 15							ı	1	1	1
Chatham, .	. 119.15					1		1	1	ı	ı
Dennis, .	. 120.10					180 00		<b>8</b> 50 00	•	1	1
Eastham.	. 27					1		1	1	1	ı
Falmouth, .	90.15							ı	10,000 00	1,000 00	•
Harwich, .	. 116	6.10	50 88	25 00	4,500 00	25 00	185 00	1	,	1	1
Mashpee, .	. 11.11	_				ı		ı	ı	ı	
Orleans, .	. 64	-				i	_	i	ı	ı	1
Provincetown.	120					ı		400 00	1	ı	ı
Sandwich, .	150					ı		1	2,900 00	200 00	ı
Truro,	. 45					1	_	1	1	!	<b>8</b> 25 22
Wellfleet, .	104					1	_	ı	1	1	•
Yarmouth, .	8					ı	185 00	1	16,000 00	00 096	ı
Total, .	7.8		\$62 57	<b>\$</b> 27 46	\$63,950 00	\$305 00	\$2,081 99	<b>\$450</b> 00	\$30,900 00	\$2,292 80	\$25 22
				BERK	BERKSHIRE CO	COUNTY-Continued	NTINUED.				
Adams,	858 20.5	9.9	\$118 45 81 00 81 00	20 00 24 10	\$20,000 00 824 71 1.800 00	1 00	\$700 00 20 00 50 00	111	- - \$1,229 00	- - 878 76	111

<b>\$4</b> 58 84	\$1,361 23	\$22,031 65	\$150 00	\$3,297 75	\$2,879 06	\$95,118 24	\$26 99	\$45 35	<u>'</u>	7.10	Total,
1	85 26	587 67	١.		242 00	_			5.16	61.10	Windsor,
1		1	1		1	_			<b>∞</b>	125	Williamstown,
ı	,	,	1		98	_			7.4	57.10	W. Stockbridge,
1	1	1	1		1	_			5.17	41	Washington,
,	ı	1	1			_			83	87	Tyringham,
1	280 00	3,000 00	1		1	_			8.10	75.10	Stockbridge, .
174 00	54 00	00 006	<b>\$</b> 150 00	175 00	300 00	4,500 00	31 84	39 75	7.15	115.12	Sheffield,
1	77 82	1,297 00	1		565 21				•	54	Savoy,
1	77 40	1,290 00	ı		312 50	_			5.14	73.15	Sandhefield,.
1	1	1	1		180 85	_			6 17	41.3	Richmond,
1	1	ı	1		1	_			8.5	841.15	Pittsfield,
1	22 28	400 00	•		•	_			4 18	28	Peru,
65 84	1	1	1		148 50	_		1	6.10	64 17	Otis,
<b>\$</b> 219 00	827 52	5,458 77	1		2 8	_	_		72	78.5	N. Marlborough,
1	ı	'	1		12 00	_			6.14	13.8	New Ashford, .
ı	1	1	1		20 00	_			~	14	Mt. Washington,
ı	104 05	1,734 17	•		410 00	_		29 00	6.10	25	Monterey, .
1	100 80	8,000 00	1		1	_			6.4	67	Lenox,
1	96 96	1,600 00	,		90 90	_			9.6	149.10	Lee
•	31 56	174 83	1			_			7.16	55.4	Lanesborough,
•	1	,	1		25 00	_			8.18	86.10	Hinsdale,
•	12 00	200 00 00	ı		1	_			0	45	Hancock,
1	57 64	960 71	,		100 00	_			8.18	157.10	Gt. Barrington, .
1	\$12 00	\$200 00	1		1	_			<b>5</b> .3	30.18	Florida,
,	ı	•	ı		82 82	_			6.15	33.13	Egremont, .
1	1	1	1		<b>864</b> 00	_		,	8.5	64.13	Dalton,
,	,	1	ı		1	_		44 8	6.16	20.8	Clarksburg, .
•		•			•	_			٥	8	· · · · · · · · · · · ·

BARNSTABLE COUNTY-CONCLUDED.

			нон	нюн всноога.	e,	NATI	CORP. ,	INCORP. ACADEMIES.	UNIN	COR. ACRIVATE	UNINCOR ACADEMIES AND PRIVATE SCHOOLS.	i .	.bet.
TOWNS	,	ппрег.	How supported.	lonths.	Salary of Prin- cipal.	umber.	.verage No.	Aggregate paid for Tuition.	umber.	verage No.	Aggregate paid for Tuition.	own's share o Fund, payabl	altqotqqa wo
	-	-  -				X -	7		g	7	-1-	L	H
Barnstable, .	•	1	ı	1	1	1	,	ı	-	22	\$1,100 00	1	Schools.
Brewster, .	•	1	1	1		ı	i	,	ī	ī	,	\$178 83	3
Chatham, .	•	_	Taxation,	9.16	\$1,000 00	ı	1	,	ı	1	,	274 71	3
Dennis, .	•	_	Taxation,	8	625 00	ı	١	1	ı	1	ı		3
Eastham,	_	1	1	ı	,	ı	1	,	ı	ī	ı		Town Treas.
Falmouth, .	•	_	In part Tax,	6	1,100 00	-	10	00 09	ī	ī	1	210 98	Schools.
Harwich, .	•	,	ı	,	ı	1	ı	1	1	ı	1		3
Mashpee, .	•	1	!	1	1	ı	,	1	ı	1	ı	135 00*	3
Orleans, .	•	1	1	•	,	ı	ı	,	ı	ı	•	175 20	3
Provincetown,	-	_	Taxation,	ខ	1,000 00	1	1	ı	٦	8	00 009	299 86	3
Sandwich, .	-	-	Taxation,	ខ	90 008 800	_	ı	,	4	100	675 00	383 41	3
Truro,	-	1	ı	1	,	ı	1	1	ı	ı	ı	169 04	3
Wellfleet, .	-	_	Taxation,	ខ	90 90 8	ī	ı	1	ı	ı	,	219 07	3
Yarmouth, .	•	_	Taxation,	8	00 006	ı	ı	1	ī	١	ı	1	z
. Total, .	<u>.                                    </u>	1		'	1	CN2	0	00 098	8	188	\$2,275 00	\$2,466 68	
					BERKSHIRE	HRE	1	COUNTY-CONGLUDED	LUDE	ā.			
Adams, .	<del></del>		Taxation,	91.6	\$ <b>\$2,000 000 }</b>	ı	,	1	1	١	1	\$676 95	Schools.
Alford, . Becket, .	<del></del>	11	11	11	:	11	11	11	17	18	\$280 00	110 28 196 80	::

	\$6,622 43	<b>\$12,800</b> 00	<b>7</b>	42	<b>2</b> 2,800 00	S	N	ı	ı	1	3	10581, ·
				T			Ī				[;	
ž	136	,	i	ı	1	•	1	ı	1	1	ı	Windsor, .
	289	150 00	2	_	•	ı	1	240 00	3	Taxation,	-	Williamstown,
*	208	500 00	22	<b>C3</b>	1	ı	ı		1	ı. [	١.	W. Stockbridge,
3	145	22 00	22	-	1	1	ı			•	1	Washington,
3	184	8	16	-	1	1	ı	:	1	1	ı	Tyringbam,
3	224	8,000 00	42	01	1	1	ı	1,200 00	9.10	Taxation,	_	Stockbridge,
3	229	200 00	22	C)	1	1	ı	00 000	10	Taxation,	٦.	Sheffield,
3	148	1	ı	1		1	1	1	1	, ·	1 ,	Savoy,
3		1	1	1	•	ı	1	1	ı	1	1	Sandisfield, .
*		ı	ı	ı	1	ı	ı	1	1	•	1	Kichmond,
3		1	•	ဆ	1	1	1	1,800 00	9	Taxation,	-	Pittsfield,
3		8 8	7	61	ı	1	ı	1		1	1	Peru,
3		1	•	1	1	1	ı		•	ı	1	, cities
3		,	ı	1	\$2,800 00	65	-	1	1	ı	1	N. Marlborough,
3		ı	1	ı	,	1	ı		I	,	ı	New Ashford,
3		1	1	1	•		ı	1	ı	1	ł	Mt. Washington,.
3		ı	1	1		1	ı	1	1	1	1	Monterey,
3		800 00	Π	ဆ	,	1	-	1,050 00	10.10	Taxation,	_	Lenox,
3		240 00	ಜ	-	1	1	ı	1,500 00	2	Taxation,	-	Lee, ·
3		ı	ı	1	1	1	•	1	1	1	1	Lanesborough, .
3		•	1	ı		1	ı	220 00	8.10	Taxation,	-	Hinsdale,
Schools.			,	ı	ı	•	ı	1	1	•	1	Hancock,
High School.	858 27	2,500 00	20	4	1	ı	•	\$1,462 50	9.12	Taxation,	_	Gt. Barrington, .
3		•	•	ı	1	ı	1	,	1	ı	1	Florida, .
3		,	1	ı	ı	1	1	ı	,	ı	1	Ligremont,
3		1	1	ı	1	ı	ı	•	1	•	•	
z		1	ı	ı	,	1	ı	•				Dalton.
Schools.	\$182 O <del>4</del>	8275 00	52	Ī	8	ı			•			ORTHODIES.

\* Special appropriation.

#### BRISTOL COUNTY.

		_																			
ot dif- persons red as irs in Sch'ls.	Fem.	18	82	œ	21	17	22	16	22	==	18	88	2	13	19	12	10	12	88	55	468
Number of ferent per employed Teachers Public Sch	Males.	2	ĸ	-	8	ı	တ	Н	8	1	•	00	တ	_		1	67	10	8	10	82
od state bet and 15 years May I, 1870.	ESSW1	286	1,212	148	640	296	780	515	5,827	270	464	8,777	288	884	တ္တ	182	896	254	8.471	248	19,879
over 15 years who attend blic Schoola	Of age	85	8	8	119	88	62	88	508	<del>\$</del>	14	887	33	ឌ	48	ຂ	27	41	135	8	1,441
under 5 years who attend bilo Schools.	98 TO	~	12	4	15	2	==	~	ı	9	Ď	1	10	œ	13	<b>a</b>	2	∞	œ	18	164
attendance in Public Sch'ls the School-	ell the	136	804	126	439	282	908	381	8,637	500	315	2,895	203	251	262	189	240	186	2,815	391	18,761
frerent Schol- Public School- the School-	at era	203	933	152	626	340	793	533	6,359	285	417	3,534	802	369	414	186	420	271	8,618	299	20,316
-oH for He-					486 00		1		9,854 70			4,168 99								676 00	\$24,868 54
expended in for Erecting Houses.	078I		ı	ı		4,860 25	1	ı	9,016 88		,	1	ı	4,088 47	1	1	896 19	•	55.510 00	1	\$77,515 79
*Hoote	No. of B	6	88	8	18	ឧ	17	13	89	00	8	22	80	6	12	00	2	10	82	8	884
Valuation1965.		\$656,500	2,201,660	816,002	2,482,270	776,779	1.980,900	1,778,217	12,632,419	706,117	750,442	20,525,790	842,527	1,115,026	764,906	496,844	866,618	755,680	8,468,074	1,458,897	\$59,464,668
.8 .U—notha .0781 ,ana		1,132	6,769	744	3,367	1,817	8,668	2,626	26,766	1,872	2,482	21,820	1,821	1,718	1,895	1,021	1,778	1.294	18,629	2,724	102,886
TOWNS.	1	Acushnet,	Attleborough, .	Berkley.	Dartmouth	Dighton,	Easton.	Fairhaven,	Fall River,	Freetown, .	Mansfield,	New Bedford, .	Norton,	Raynham,	Repoboth,	Beekonk, .	Somerset,	Swanses,	Tannton,	Westport,	Total, .

			_						_			
Chilmark,	476	\$350,801	8	ı	ı	109	\$	4	23	105	81	4
Edgartown,.	1,516	1,035,467	00	\$200 00	\$200 00	280	248	1	48	823	-	10
Gay Head, .	160		-	1	12 65	65	38	1	90	40	-	-
Goenold,	66	112,993	-	,	1	12	0	•	ဆ	18	1	~
Tisbury,	1,536	684,714	∞	ı	650 00	307	240	п	35	815	2	4
Total, .	8,787	\$2,188,975	21	\$200 00	\$862 65	788	617	16	115	762	π,	20
	_	_						_			-	

## BRISTOL COUNTY-CONTINUED.

TOWKS.	6 Length of Schools for 17, in Months		Average Wage Teachers per r including the of Board.	Wages of per month, the Value	of Teachers,	of board, fuel, lantarily con- factor of the for	of Superin- draphy print- draphy and separate.	-Buperintend- Rublic Beh'le.	School Funds, ome of which the support ademies and to support ademies and L	from Locki Funds.	or Funds, ap- ted to Public as the option Yown, includ- ton dogs.
	Pablic	Average returne mittee.	Malos	Females.	8970	OV , 535	nabnat		to 1'mA the fired of man of vired of Accordances	Income Bohool	proprie Moodo8 of the
Acushnet.	72	<b>∞</b>				1		\$75 00	1	,	,
Attleborough, .	288	8.4	75 00			ı		ı	\$11,000 00	\$450 00	ı
Berkley,	41.10	6.18				1		ı		ı	1
Dartmouth, .	141.5	4.6		25 50	4,500 00	<b>\$</b> 190 00	184 75	1	١	ı	1
Dighton, .	72.15	7.6	,			ı		1	,	•	1
Easton,	140.5	8.5				ı		1	1	1	
Fairbaven, .	120.10	9 18	126 15			ı		,	2,000 00	800	ı
Fall River,	677.5	10.15				ı		2,000 00	,	1	1
Freetown, .	66 14	8.12	1			,			,	•	1
Mansfield, .	55 10	6.3				ı		62 50	700 00	42 00	•
New Bedford,	233.2	10.8				,			ı	ı	1
Norton,	. 58.16	7.8	46 66			1		1	1	ı	1
Raynbam, .	92	~				ı		1	ı	1	ı
Reboboth, .	8	0	ı			1		1	8,000 00	180 00	ı
Seekonk, .	49	8.8	ı			8 8 8		ı	1	1	
Somerset,	22	7.17				,		ı	ı	1	1
Swansea,	82	5.18				65 00		90 90 90	,	1	1
Taunton,	645.11	9.7	124 06			•		2,000 00	8,500 00	850 00	60 69
Westport, .	164.10	7.15			4,500 00	t			1	ı	•
Total, .	8.18	'	<b>\$</b> 72 26	<b>\$</b> 82 56	\$188,881 07	\$277 00	\$5,174 80	\$6,197 50	\$28,200 00	\$1,822 00	60 698
								    -			!

				_					_			
Chilmark	18	•	845 00	<b>8</b> 25 40	8550 00	,		ı	1		ı	_
Edgartown.	56.10	7.1	92	22 50	2.000 00	1		,	,	•	,	•
Gav Head.	7	7	45 00	17 00		1		,	,	1	,	
Goenold,	0	9		26 00	125 00	,		ı	1	ı	1	
Tisbury,	48	9	45 24	18 95	2,200 00	1	00 06	,	1	ı	ı	
Total, .	6.9	'	\$50 08	\$21.97	\$4,875 00	,	<b>8364</b> 55	,	.	'	,	
•					•							

BRISTOL COUNTY-CONCLUDED.

.bed.	singondqa woH	Schools.	3	3	3	3	3	3	3	3	3	Gen'l purposes.	Schools	3	3	3	3	3	3	3	
	Town's share of Fund, payabl ary 25, 1871.											1,138 49								231 92	<b>\$</b> 7,267 85
UNINCOR, ACADEMIES AND PRIVATE SCHOOLS.	Aggregate paid for Tuition.	ı	1	ı	1	1	1	1	00 006	1	450 00	5,500 00	100 00		1	ı	ı	ı	00 009	ı	\$7,550 00
COB. ACPRIVATE	Average No. of Scholara.	ı	,	1	1	,	16	1	45	1	\$	820	25		,	1	1	•	82	t	478
UNIN	Number.	1		ı	ı	1	7	i	2	·I	Ţ.	8	-	ı	ı	ı	1	1	ଷ	ı	27
INCORP. ACADEMIES.	Aggregate paid for Tuition.	•	1		•	1	1	•	ı	,	1	<b>87</b> ,000 00	5,500 00	1	1	•	1		2,160 00	1	\$14,660 00
CORP.	Average No.	1	1	ı	1	1	ı	1	١	ı	1	92	106	ı	ı	١	ı	1	20	ı	280
Ä	Уатьог.	1	ı	ı	ı	i	1	ı	1	1	1	-	-	1	1	1	ı	1	-	ı	80
s,	Salary of Prin- olpal.	1	\$1,000 00	1	200 00	1	1,000 00	1,230 00	1,600 00	,	1	1,800 00	1	ı			1		1,500 00	900 008	ı
нісн всноога	Months.	1	2	ı	G	1	10	9.15	10.7	ı	1	10.8	,	ı	ı	ı	1	1	2	a	1
нин	How supported.	ار	Taxation,	1	Taxation,	•	Taxation,	Taxation,	Taxation,	,	ı	Taxation,	ı	1	ı	ı	ı	ı	Taxation,	Taxation,	
	Number.	1	CI	ī	-	ı	_	-	-	1	ı	-	1	ı	ı	ı	ı	1	_	-	a
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	٠	•	•	•	•	
	TOWNS.	Acushnet, .	Attleborough,	Berkley,	Dartmouth, .	Dighton,	Easton,	Fairbaven, .	Fall River, .	Freetown, .	Mansfield, .	New Bedford,	Norton,	Raynham,	Rehoboth,	Seekonk,	Somerset,	Swansea,	Leunton,	westport, .	Total,

DUKES COUNTY-CONGLUDED

1												
• • • •	1-11	Taxation,	1 1 1 1	\$520_00 - -	1111	11118	00 008	141100	100	\$150 00 - - 444 00	\$128 20 190 84 180 00* 106 43 204 53	Schools.
Total, .	-	•	1	1	П	8	\$300 00	2	186	\$594 00	\$805 00	

\* Special appropriation.

ESSEX COUNTY.

dif- se ni	.	ده ا		**	8		_	œ		_	œ		C		0	80	ю	œ	10	-	~	_	4 00	<b>- 4</b>
	Fem.	Š	Ç	œ	_	<b>~</b> i	Ş.	_	11	δõ	_	•	Ð	-	F	ă	_	_	Ñ	Ä	•	•		4
Number of ferent per employed Teachers Public Sch	Males.	10	<b>∞</b>	<b>C3</b>	4	67	10	<b>∞</b>	_	<b>∞</b>	-	۵	4	4	4	0	1	-	<b>10</b>	C)	•	_	. ,	6
he State be- 5 and 15 years May 1, 1870.	TWOOM?	.958	688	1,271	165	268	1,198	872	416	3,116	886	180	2,166	572	4,846	5,904	124	298	1,445	527	288	25	218	2,452
over 15 years who attend blic Schools.	oge lo	82	\$	8	82	82	88	72	19	275	8	31	117	15	169	182	24	22	45	87	11	oc	21,	149
ander 5 years who attend bile Schools.	ogs 10	12	15	1	_	1	10	1	<b>∞</b>	1	-	_	<b>0</b> 0	4	2	•	_	•	ı	00	a	. 1	12	<u> </u>
attendance in Pablic Soh's -loodos edt	edt fla	698	672	917	121	286	831	262	842	2,465	208	101	1,847	417	2,659	8,626	118	222	1,086	380	227	88	147	1,578
ferent Schol- aloados oblan- -loodos edt	I al era	888	853	1,192	164	422	1,118	854	415	3,340	291	134	2,268	208	8,625	4,812	192	817	1,308	629	242	20	242	2,636
-6H for He-		i				_	_	_	896 00			_	8,935 81	_	Ξ.	Τ.	_	_	_	_			_	
nt behåded in Trecting Hendelen	1810	\$4,124 82	1	10,425 00	2,000 00	i	6,466 64	1	ı	1,974 61	8,500 00		11,786 57		17,557 85	9,831 12		1	1,583 00		1	ı	ı	2,698 75
chools.	No. of B	28	18	22	Ö	00	19	G	91	34	8	4	46	22	28	21	7	~	19	18	20	87	~	82
• Valuation—1965.		\$1,677,632	2,702,428	8,359,216	631,942	832,083	2,287,630	912,417	760,478	4,505,390	666,119	481,428	4,488,107	1,556,491	11,240,191	10,058,309	604,617	766,888	2,181,268	1,202,951	892,446	617.194	767,849	7,659,060
.8 .U—notts .0781 ,ana.		5,581	4,878	6,507	847	2,014	2,800	1,614	2,088	15,389	1,778	190	13,092	8,720	28,921	28,283	818	1,665	7,708	2,959	1,010	476	1,430	12,596
TOWNS.		Amesbury,	Andover,	erly,	ford,	Bradford,	Janvers,	Х,	Georgetown,	Gloucester, .	Groveland,	Hamilton,	Haverhill,	rich,	AWrence,		.ynnfield,	fanchester, .	Marblebead, .	Methuen,	Middleton,	Nahant,	Newbury.	Newburyport, .
		Ame	And	Beverly	Boxford	Brad	Dan	E890X,	<u>ş</u>	Glon	Gro	Ham	Hav	Ipswich,	Law	Lynn,	Lyn	Man	Mar	Met	Ď. V.	de Z	New	New

25	# 10 g	27	9	<b>6</b> 4	18	793
4120	N ;	∓°	١	∞ <del>4</del>	<b>&amp;</b>	117
1,440	214	0,340	466 345	237 166	431	38,639
78	E 88	20 S	22	8 4 4	55	2,374
6N 1	1	1 2	ο I	#	81	150
1,022	133	480	818 273	188	882	25,694
1,865	207	4,178	409 842	28 <del>4</del> 190	415	35,174
8408 92 870 00	250 00			250 00	186 20	\$89,109 70
\$42,320 00	479 US	1,851 94	1 1	1 1	,	<b>\$159,463</b> 80
222	300	24	<b>0 K</b>	10 10	=	578
\$1,830,829 3,819,766	511,171	16,192,359	1,800,074	687,610 463,558	940,919	\$90,393,467
2,549	1,157	24,117 8,776	2,247	1,213 985	2,006	200,843
North Andover, .	Rowley,	Salisbury,	Sangus,	Topsfield,	West Newbury, .	Total,

### ESSEX COUNTY-CONTINUED.

of Funds, sp- ated to Public is at the option Town, includ- a on dogs.	htopq oodo8 od the	ı	ı	ı	<b>\$58</b> 10	•	300 800	i	1		1	•	521 18	ı	1	ı	i	•	1	196 00	•	1		ſ
from Local		1	\$6,017 23	180 00	145 70	1	ı	1	•	,	ı	,	1	230 00	ı	1	1	,	559 04°	ı	,	•	1.200 00	4,004 04
School Funda, come of which appropriated to the support to sales and all	can be	,	8	8	2,487 00		1	ı	ı	ı	1	١	,	8,200 00	1	ı	1	1	6,550 00	1	1	1	20,000 00	65,000 00
f Superintend- Public Sch'lz.		1	ı	\$1.500 00	1	ı	,	ı	,	2,000 00		1	,	,	1,500 00	1	ı	1	ı	ı		,	,	- -
se of Superin- noe and print- hool Reports.	tender									2,357 20														
of board, fuel, included to some solution of the solution of t	V ,.035	<b>8</b> 215 00	1	1	1	ı	t	1	1	390 80	1		ı	1	1	1	ı	•	200 00	8	,	•	00 <b>07</b>	1
by Taxes for landing l	BCDOO Wages board,	_	-	_	_	_	_	_	_	29,200 00	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Wages of per month, the Value	Femalos.	1							_	81 98	_	_	-	-		-						_	_	_
Average Teachers including of Board.	Males.	882 50	133 15	125 00	20 20 20	118 83	89 00	86 98	111 111	100 10	8	51 20	110 42	61 25	221 67	158 34	ı			87 80		75 80	ı	94 26
Length as	A verage grubor grubor estitut	6.17	8.17	01	8.16	. 01	8.6	7.18	8.18	9.1	<b>a</b>	7.10	7.18	9.1	2	2	8.7	10.8	10.10	0.5	9.10	11.5	7.16	2
te Length of Schools for adjace in Months avs.	Public	1586	168.12	250	44	8	172.10	68.17	89.2	307.10	25	29.10	896.13	108.10	280	485	87.8	72.18	190.10	118.10	47.10	23	27.50	270
TOWNS.		Amesbury.	Andover,	Beverly,	Boxford,	Bradford,	Danvers,	Essex,	Georgetown,	Gloucester, .	Groveland,	Hamilton,	Haverhill, .	Ipswich,	Lawrence,	Lynn,.	Lynnfield,	Manchester,	Marblehead,	Methuen,	Middleton, .	Nahant.	Newbary.	Newbury port,

\$1,849 40	\$13,084 41	\$215,427 00	\$7,580 00	\$15,128 15	\$865 80	<b>\$368,347 58</b>	<b>\$34</b> 07	892 75	1	9.5	Total, .
1	,	ı	1		•			44 83		88	West Newbury, .
ı		1	1		1			57 50		42.5	Wenham,
1	ı	ı	8 8		ı			53 34		40.18	Topsfield,
1		,	1					120 00		2	Swampscott,
,		,	1		ı			,		8	Saugus,
167 12		•			ı			61 80		124.17	Saliebury,
•	200 00	4,000 00	\$2,500 00		1			144 70		628.8	Salem,
1		,	,		ı			49 00		88.1	Rowley,
<b>\$</b> 107 00	,	1	•		•			8 8 8		87.13	Rockport,
,	210 00	3,000 00	,	286 00	•	19,000 00		122 45		156 10	Peabody,
			1		1		830 21	888 31	9.15	118	North Andover, .

#### ESSEX COUNTY-Concluded.

		RIGE	иси всноося	.8.	IN	CORP. 4	INCORP. ACADEMIES.	UNIN	COR. AC.	UNINCOR, ACADEMIES AND PRIVATE SCHOOLS.		-per
10 W N 8.	Упшрег.	How supported.	Months.	Salary of Prin- cipal.	Number.	Average No.	Aggregate paid for Tuitlon.	Namber.	Average Mo. sralofors.	Aggregate paid for Tuition.	Town's share of Fund, payabl ary 26, 1871.	sahqorqqa woH
Amesbury,		Taxation,		00 008	1	1	1	2	185	\$426 00		Schools
Andover,	_	Taxation;	2	1,500 00	01	8	\$13,607 20	က	31	525 60		3
Beverly,	_	Taxation,		1,500 00	ı	1		61	35	425 00		3
Boxford,	'	•			١	ı	1	<u> </u>	<u> </u>			3
Bradford,	_	Taxation,	2	1,200 00		125	6,522 58	ı	ı	,		3
Danvers,	<b>-</b>	Taxation,	2	1,200 00	•	ı	,	_	65	475 00		3
Essex,.	<u>'</u>	•	1		١	•	1	-	ຊ	12 00		3
Georgetown, .	_	Taxation,	6	1,000 00	ī	ı	ı	1	1	•		3
Gloucester,	_	Taxation,	10.5	2,000 00	1	1	•	61	40	200 00	890 23	3
Groveland,	۱ —	1	,	ı	1	ı	1	ı	. 1	•		3
Hamilton,	1	1	1	1	ı	ı	•	ī	•	•		3
Haverhill,	_	Taxation,	10.5	2,000 00	ī	ı	,	œ	75	825 00		3
Ipswich,	_	Taxation,	10	1,100 00	1	ı	,	œ	188	2,200 00		3
Lawrence,	_	Taxation,		3,000 00	1	ı	1	*	1,200	,		3
Lynn,	_	Taxation,		2,000 00	ı	'	,	80	885	9,869 00		3
Lynnfield,	ı —		1	,	1	1		ı	1	•		3
Manchester,	_	Taxation.		840 00	,	1	,	7	ಜ	120 00		3
Marblebead, .	_	Taxation,		1,200 00	-	1	,	01	22	<b>4</b> 50 00		3
Methuen, .	_	Taxation,	_	1,000 00	1	•	•	•	,	ı		3
Middleton.	-	1	1	•	,	ı	1	ı	1	1		;
Nabant,	1	1	١	i	1	ı	1	1	ı	,		Town Treas.
Newbury,	۱۰ -	1.		1 300		<b>9</b> 9	00 009	15	146	160 00		Schools.
Mewbury jort,	-	LEXELOR.	10	00 008.1	-	3		2	011	3		-

	Schools.	3	"	3	General use.	Schools.	Gen'l purposes.	Schools.	3	3	3	
•	<b>\$</b> 241 78	508 12	828 88	163 17	1,563 32	306 00	226 83	194 47	165 96	148 92	213 48	\$14,078 20
	i	•	1	\$28 00	16,500 00		ı	1	1		1	\$32,615 60
	1	1	1	36	1,888		ı	i	ı	1	1	8,748
	,	1	ı	-	88	ı	ı	1	1	ı	ı	<u>ي</u>
	1	•	,	1	•	i	•	1	i	1		\$20,729 78
	ſ	1	t	ı	1	1	1	ı	•	ı	1	505
•	i	1	ł	1	ı	1	1	ı	1	1	1	9
₩ 1050 00 -	1000 000		2000	1	2,500 00	720 00	,	1	,	1	ı	1
9	10 K	2	B	1	10.5	8.5 8	ı	1	1	1	•	•
Taxation.	Taxation		Laxation,	,	Taxation,	Taxation,		•	•	1	1	
	_		-	ı	_	-	1	1	1	1	1	8
North Andover, .	reabody.	Dockman	TANCEDOLE	Rowley,	Salem,	Salisbury,	Saugus,	Swampscott,	Topsfield, .	Wenham, .	West Newbury, .	Total, .

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of dif- persons id as s in 3ch'ls.	Fem.	21	2	15	12	21	18	7	2	œ	21	15	ខ	2	စ	Ġ	18	Ξ	12	83	ឧ	11	1	a
Number of different persons employed as Teachers in Public Sch'ls.	Males.			_	_	တ	i	4	C3	_	တ	တ	<b>~</b>	-	4	1	_	ı	4	ಞ	_	03	<b>~</b>	ī
-ed state be- f and I5 years May I, 1870.	tween.	214	156	399	193	818	271	602	105	122	658	130	110	146	116	41	431	158	380	897	187	351	100	165
over 15 years who attend bite Schools.	of age	48	16	စ္တ	37	8	34	74	14	52	2 23 26	16	87	22	18	2	84	58	9	62	28	26	8	84
under 5 years who attend blic Schools.	og age	6	က	<b>G</b>	<b>⊘</b> 1	12	13	==	10	~	1	1	6	9	တ		14	<u>a</u>	13	9	<b>∞</b>	CI	 0,	<b>5</b>
attendance in Public Sch'la -foodog adt	all the	174	117	281	149	266	219	469	85	97	420	118	116	123	87	87	288	157	279	588	06	550	108	134
-forent Schol- alocates shidu -foodos edit	I mi era	233	151	382	204	857	343	128	117	130	260	160	179	177	108	55	483	182	860	880	145	808	187	210
-9A rof blaq .078f at ,.035,								2,266 17			1,825 00	1			10 00			1		450 00				80 00
expended in or Erecting Honses.	1 078£	,	ı	1	ı	•	\$1,241 80		1	•	1	1	•		ı	1	1	•	1	485 00	1			-
pools	No. of Bo	14	9	10	00	13	18	19	ıc	8	13	6	00	80	20	61	13	00	15	14	80	10	7	-
Valuation-1965.				526,468	367,216	637,954	703,919	1,215,423	178,229	390,569	1,899,806	182,638	232,551	284,644	278,647	79,875	606,787	836,476	712,064	599,248	180,425	822,020	219,250	418,827
.6 .U—noth		1,180	961	1.946	1,005	1,742	1,460	3,632	579	653	3,589	672	613	877	518	201	2,224	186	1.720	2,001	189	1.582	614	887
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-		•	-	
H OH W N		Ashfield.	Bernardston.	Buckland	Charlemont.	Coleraine.	Conway.	Deerfield, .	Erving,	Gill.	Greenfield.	Hawley,	Heath,	Leverett, .	Leyden, .	Monroe,	Montague,	New Salem,	Northfield.	Orange.	Rowe.	Shelburne.	Shutesbury.	Bunderhund,

Warwick, . Wendell, . Whately, .	• • • •	769 539 1,068	\$229,558 201,657 665,972	αο rc εο	1 1 1	#45 95 10 10	184	124 63 188	တေ၊က	ଅ <sup>।</sup> %	124 79 167	- 10	12 9
Total, .	•	32,635	\$13,048,120	232	\$1,676 80	\$6,279 94	6,500	4,621	180	851	890'9	44	342
					HAMPD	EN COU	NTY.						
Agawam, .	•	2,001	\$816,850	<b>∞</b>	ı		818	230	7	16	359	-	14
Blandford, .	•	1,026	529,150	12	t	234 38	234	106	=	ဆ	224		18
Brimfield, .	•	1,286	719,750	00 0			241	88	<u>- 1</u>	22.5	218	cv .	9
Chester,	•	1,253	445,800	21 6	00 0189		282	188	0 0	9 5	241		3 °
Calcopee, Granville.	•	1.293	516.277	22		1 1	305	217	110	37	1,104	# 1	9 6
Holland,		344	131,000	4	1		88	8	ıc	3	*	က	4
Holyoke,	•	10,733	2,579,250	စ္တ	ì		1,141	808	23	22	1,940	80	4
Longmeadow,	•	1,342	1,016,500	2	ı		274	200	8	35	267	-	13
Ludlow,	•	1,138	455,050	8			222	155	9	88	283	C1	11
Monson,	-	3,204	1,316,700		1,900 00	149 12	642	397	17	82	542	1	14
Montgomery,	•	818	158,850	o i	1 1		8 9	45	₹;	<b>~</b> 6	9	i	<b>20</b> }
Palmer, .	•	8,631 895	1,254,000	17	675 00	_	740	459	17	85	138	<b>3</b>	80
Konthwick .	•	35	604 200	2	4 000 00		811	36	101	5.5	943	1 4	2.0
Springfield.	-	26,703	13,379,212	82	12,444 57	4.027 70	4.679	8.407	25	287	4.232	11	103
Tolland,	-	209	298,588	0	1		116	12	12	17	115	-	œ
Wales,	-	831	254,600	'n	1	,	141	112	ı	25	135	_	•
Westfield, .	-	6,519	3,244,600	88	ı	.2,000 00	1,234	910	18	199	1,131	4	88
W. Springfield,	•	2,606	1,319,550	15	21,819 15	129 91	453	340	9	31	431	ı	18
Wilbraham,	•	2,330	872,100	13	2,000 00	ı	875	282	18	22	418	<b>e</b>	18
Total, .	•	78,409	\$33,253,177	835	\$57,578 40	\$10,586 18	13,719	9,466	252	1,107	13,787	45	455
		- i										-	
1													

of Funda, ap- ated to Public is at the option Town, includ- agob ac	propri loodo8 edt the		1 1	\$182.30	1	,	1	;	54 00	} '	,	ı	•	•	ı	12 8	1	ı		•	ı	1	1	1
from Local		•	81.250 00	54 89	48 00	,	25 00	000		ı	•	24 00	ı	,	ı	1	•	1,200 00	98 00		12 00		16 00	
School Funda, some of which e appropriated or the support cademies and is.	nd edt d nao I Vino	•	810.716.67	915 00	8	ı	300 00	10,000 00		,	ı	400 00	1	1	1	1	ı	19,500	. 1	,	200 00	1	267 88	,
of Superintend- Public Sch'le.		,	ı	ı	ı	i	1	ı	ı	ı	ı	ı	1	ŧ	ı	1	1	ı	1	ı	ı	1	ŀ	1
es of Superin- nce and print- hool Reports.	tende					_		204 67		_	_	_	_	-	_	_		_	_	_		-		
t of board, fuel, foluntarily con- ied for Public ie.	4.035	8204 00	87 00	8	ı	150 00	102 00	279 19	1	390 00	ı	•	•	•	845 00	,	1	1	ı	ı		240 00	,	_
by Taxes for jet, including to "Teachers, or "Teachers, the to school-" the school-" (17.078)	Meges Prage Dracd fres fres fres	_	_	_	_	_	_	4,980 00	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Wages of per month, g the Value	Females.							32 28																
Average Teachers   including of Board.	Males.	ı	47 00	28 00	51 00	31 00	1	65 52	23 00	25 00	125 00	28 00	29 97	86 17	36 25	1	3	1	44 00	49 80 80	26 00	87 40	28 88	- 1
se Length as ned by Com-		5.14	6.13	8 5	5.12	28	5.19	6.16	6.7	8 5	8.16	<b>5</b> 0 (	נ פ	7.1	<b>پ</b>	<b>-</b> 0	01	7	6 11	6.18	8	6.16	8. 8.	80
rate Length of its form of the	the y	79 12	40	62.10	45	33	77.15	129 5	87.8	87.10	106	\$	200	42.2	2:	# 2	0;	86	7810	79 16	88	89	48.5	- 41
TOWNS.		Ashfield, .	Bernardston,	Buckland,	Charlemont,	Coleraine,	Conway,	Deerfield,	Erving,		Greenfield, .	Hawley,	reach,	Leverett,	Leyden,	Montos,	Manual de la company de la com	Marel Galan,	Northneid, .	Orange,	Kowe,	Shelburne, .	Shulesbury,	Sunderland, .

\$56 00 -	\$254 80			08 80 <b>8</b>	ı	689 71	! !	•	1	184 22	'	•	45 00	1		95 96	1	90 88 80	1	ı	•	ı	\$1,095 69
#30 00 41 40	<b>\$3,867</b> 29		•	<b>\$147</b> 00	2,200 00	3 ' 8 '	,	i	1	44 86		2,100 00	1	56 14	1	946 86	•	1	,	800			\$7,075 17
\$500 00 540 00	\$44,139 00		1	\$2,450 00	85,000 00 20,000 00	3',	1	ı	1	731 00	1	25,500 00	1	850 00	ı	5,618 01	1	1	1	48,000 00	14,183 00	1,705 25	83,500 00 132,687 26
1 1 1			ı	ì	ı	1 1	ı	1	00 008	1	ı	ı	ı	1	ı	ı	2,700 00	1	1	1	1	1	\$3,500 00
889 68 85 26 85 00	<b>\$</b> 2,528 26	TINUED.				625 00																	\$3,204 48
<b>\$</b> 15 00	\$1,872 19	COUNTY-CONTINUED	\$50 00		1 2	3 .	ì		1	ı	1	1	8	ı		88	1	215 60	ı	ı	1	24 00	\$1,281 21
1,200 00 1,300 00 1,300 00	<b>64</b> 5,780 00	HAMPDEN COU				17.708 64																	\$155,184 28
22 22 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20	\$26 13	НАМ				80 22																	\$29 05
\$8 00 84 00	844 46					127 20			140 00			1	ı	<b>4</b> 8	1	40 40	168 83	8 8	28 00	186 00	1	85 00	\$62 42
6.10 6.8 6.9	,		7.9	6.9	7.10	. 60	6.1	0	8.6	87	8	•	•	7.1	8	7.8	9	<b>6</b> .8	<b>8</b> .9	0	83	6.18	1
51.18 82 88.18	68		89	77.10	24. 5 25.	228.15	72 15	24	282.6	83.8	21	101.10	8	120	88	748	870	36.5	89.16	244	148.16	89.15	8.8
Warwick, Wendell, Whately,	Total, .		Agawam,	Blandford, .	Brimfield,	Chicopee.	Granville, .	Holland,	Holyoke,	Longmendow,	Ludlow,	Monson,	Montgomery, .	Palmer,	Russell,	Southwick,	Springfield,.	Tolland,	Wales,	Westfield,	W. Springfield, .	Wilbraham,	Total,

FRANKLIN COUNTY-CONCLUDED.

		нога	ния всноога	.8.	ă	CORP. A	INCORP. ACADEMIES.	UNIN	COR AC	UNINCOR ACADEMIES AND PRIVATE SCHOOLS.	11	.bed.
TOWNS.	Number.	How supported.	Months.	Salary of Prin- cipal.	Namber.	Average No.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Town's share o Fund, payabl ary 25, 1811.	shqorqqa woH
Ashfield,	-	1	1	ı	-	25	\$300 00	ı	1	,		Schools.
Bernardston.	_	In part Tax,	80 70	1	1	1	1	1	,			3
Buckland.	1		•	1	1	•	,	1	ı			*
Charlemont, .	1	,	1	,	ı	ı	•	တ	88	\$261 00	167 65	×
Coleraine, .	_	ı	ı	•	1	1	,	ı	ī	ı		3
Conway,	1	1	ı	1	1	1	ı	က	ଛ	160 00		3
Deerfield,	_	Taxation,	9.15	\$1,000 00	П	22	195 86	က	4	420 00		×
Erving,	-	1	1	1	ı	1	ı	1	1	•		3
Gill,	1	ı	1	ı	ī	ı	,	ı	1	,		3
Greenfield, .	_	Taxation,	22	1,250 00	83	20	3,000 00	-	စ္တ	00 009		,,
Hawley,	1	,	1	ı	1	i		1	1			¥
Heath,	1	ı	1	,	ı	1	•	1	ı	1		3
Leverett, .	1	ı	ı	,	ı	1	1	63	_	125 00		z
Leyden,	1	,	•	ı	ı	1	1	-	1	125 00		z
Monroe,	1	1	1	ı	ī	1	1	,	ł	•		¥
Montague,	1	1	1	ı	ı	1	1	61	8	895 00		3
New Salem,	ا —	,	1		-	45	200 002	ı	ı	ı		3
Northfield,	_	,	,	1	i	•	,	-	8	800 00		2
Orange,	1	1	ı		1	ı		0	8	420 00		3
Rowe,	-	,	ı	ı	1	1	i	1	'			3
Shelburne, .	-	1	,		-	75	1,400 00	-	12	150 00		3
Shutesbury,	ا 	,	- -	,	1	1		1	•	•		<b>:</b> :
Bunderland,	ا -	!	- -	- !	ī	•	,	7	-	1		:

					•		•	1			7 × ×	000
	_										07 0014	900
· (nonnou)	! _	:		1	1	•	,	1	•	1	112 39	3
Whately,	<u>'</u>	1	1	1	1	i	1	1	1	1	157 31	3
Total, .	<del>∞</del>	1	'		0	220	\$5,595 86	19	822	\$3,456 00	\$4,335 42	
	-	-	-	HAMPDEN	DEN	COU	COUNTY-CONCLUDED.	UDEL				
Agawam,	-	1	•	•	1	1	-	2	20	\$150 00		Schools.
Blandford,	1	1	1	1	1	1	1	ı	1	1	167 64	3
Brimfield.	_	Endowment,	10	<b>\$1.2</b> 00 00	1	1	1	1	i	1		3
Chester,	1	,	1		1	1	ı	-	8	100 00	176 31	3
Chicopee, .	63	Taxation,	10	5 1,800 00 5 2,000 00 5	ı	ı	ı	7	350	++	510 64	3
Granville,	1	1	1		1	ı	1	03	80	100 00		3
folland,	1	ı	•	1	1	ı	1	ı	1	ı		3
Holyoke,	_	Taxation,	9.15	1,600 00	1	1	1	Ŧ	225	++	689 19	3
ongmeadow,	1	'	ı		1	ı	ı	. 1	ı	. 1		3
Ludlow,	 	•	•	ı	ı	1	1	ı	1	1		3
Monson,	_	Taxation,	2	1,500 00	-	98	\$2,488 71	8	35	00 009	233 62	3
Montgomery.	1	1	•	•	1	,	1	ı	1	,		3
Palmer,		Taxation,	2	940 00	1	ı	ı	ı	1	,		¥
ussell,	1		1	,	ı	ı	•	ı	1	,		3
Southwick,	<del></del>	Taxation,	4.5	276 25	1	1	1	-	9	20 00		3
Springfield,.		Taxation,	92	2,400 00	1	1	,	13	825	10,000 00	1,261 78	3
Tolland,	-	1	1	1	ı	•		1	1			3
Wales,	-	1	1	1	ī	1	ı	-	16	20 00		3
Westfield.	_	Taxation,	10	1.900 000	ī	ı	1	-	8	1,000 00	425 66	3
7. Springfield.	_	Taxation,	9	727 50	1	1	•	જ	35	250 00	240 04	3
Wilbraham, .	1	1	1	1	-	900	12,000 00	-	စ္တ	415 00	214 05	3
Total, .	ឧ	1	ı	1	63	896	\$14,488 71	88	1,132	\$12,795 00	\$5,828 69	

HAMPSHIRE COUNTY.

of dif- persons red as rrs in Sch'ls.	Fem.	27	18	15	15	21	12	7	2	14	18	15	18	2	1.1	Ď	80	11	18	=	88	<b>a</b>
Number ferent employ Teacher Public E	Males.	80	8	တ	67	1	-	-	ı	ı	1	-	-	67	8	_	61	87	21	81	\$	ī
-ed State be- 5 and 15 years May 1, 1870.	1300WJ	661	450	154	220	768	151	2	157	108	428	878	224	172	1,948	129	96	2	583	<b>5</b> 78	857	137
over 15 years who attend bile Schools.	OZ BEG	144	89	26	85	8	22	12	<b>8</b>	58	45	23	83	17	201	21	88	15	64	48	91	16
under 5 years who attend bile Behools.	Of age	19	17	20	တ	<b>a</b>	7	63	<b>∞</b>	•	9	2	<b>3</b>	<b>a</b>	<b>∞</b>	10	•	8	10	7	6	2
attendance in sl'doß oldur -faccios edt	off fia	592	895	117	159	422	127	61	143	88	840	230	188	125	1,456	82	79	72	408	144	688	124
-loches trending gloches stides -loches eds	[ at sna	818	518	193	225	811	175	84	216	123	228	840	588	148	1,839	165	162	110	230	251	1,081	177
		2	2	2	2	9	ø	2	2	55	4	22	92	<u> </u>	8	8	8	8	6	2	8	
-ora rot blaq .0781 at026 ,		1,077																				
		78	2	2					_		2	8		_	8	2			31	88	2	8
expended in for Erecting Houses.	1870	\$9,964 7			ı	1	•	ı	1	ı		4,880						•				
shoots.	Mo. of Bo	18	8	8	2	14	<b>∞</b>	4	B	8	18	9	<b>∞</b>	-	<b>4</b>	4	80	9	=======================================	<b>60</b>	2	8
Valuation-1965.		\$1,860,457	1,108,591	872,790	842,842	1,700,599	610,644	152,796	470,126	261,416	1,279,320	1,442,691	409,895	851,881	4,789,965	197,457	289,097	221,712	1,108,491	502,448	1.806.545	291,384
,8 .U—motta .0781 ,ana		4,035	2,428	811	1,087	8,620	1,023	368	863	985	2,801	1,594	1,156	728	10,160	678	621	<u> </u>	2.840	1.159	4.259	282
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•
TOWNB.		Amberst, .	Belchertown,	Chesterfield,	Cummington,	Easthampton,	Enfield,	Goshen,	Granby,	Green wich,	Hadley,	Hatfeld,	Huntington,	Middleffeld,	Northampton,	Pelham,	Plainfield.	Prescott.	South Hadley.	Southampton.	Ware	Westhampton,

10	878
1 60	1.7
	8,665
	1,096
12	. 174
362 140	6,483
200	9,557
88	8
\$600	8,567 60
1,000 00	₩04,334 85
45 8	3
\$1,085,693 409,655 \$20,510,994	
2,159 860 84,888	
Worthington, Total,	

## HAMPSHIRE COUNTY-CONTINUED.

of Funds, ap- tied to Fublic at the option Town, includ- t on dogs.	propris School of the	1	•	ı	ı	•	ı	1	1	1	ı	1	1	290 57		1	ı	86 00 8	155 80	1	181 87	ı
from Local Funda.	усроој Всроој	1	,	<b>\$</b> 71 00	•	5,000 00	1	ı	i	80 00	2,322 00	ı	1	1	199 63	,	ı	1	120 00	124 25	1	1
School Funds, ome of which appropriated r the support ademies and	outeut l	1	1	\$1,100 00	1	75,000 00	•	ı	1	200 00	29,066 00	,	1	ı	2,906 87		•	ı	2,000 00	1,775 00	1	-
Superintend- ubite Sch'le.		\$1,500 00	•	1	ı	ı	1	1	1	1	,	'	ı	ı	2,000 00	1	,	1	ı	١	1	•
of Superin-	tenden							-							24 00							
of board, fuel, luntarily con- d for Public	OV ,.535	\$300 00	ı	519 00	900	1	1	188 00	1	ı	•	•	86 00	1	ı	1	1	ı	25 00	22 00	2 00	•
y Taxes for a for	School Wages Doard, Ares	\$8,000 00	2,000 00	_	_	_	_	_	_	_	_	_	_	_	24,080 00	_	_	_	_	_	_	
verage Wages of Teachers per month, including the Value of Board.	Females.														88 14							
Average V Teachers I including of Board.	Males.			31 67			32 00	28 00	1	ı	ı				99 16							
Length as	Average returner solities.	8.6	8.8	6.14	6.5	9.3	6 16	6 17	7.10	61	7.12	7.13	6.8	9	9.18	8	8	8	8.14	7.13	7.14	7.16
e Length of Schools for 17, in Months ys.	Public	149.12	128	60.9	62.15	128.5	64.10	27.6	67.15	39.10	99.4	69	51	42	455.5	24	88	86	95 10	61.5	161.19	- 22
TOWNS.		Amherst,	Belchertown.	Chesterfield.	Cummington.	Easthampton,	Enfield.	Goshen.	Granby.	Greenwich.	Hadley.	Hatfield.	Huntington.	Middleffeld.	Northampton, .	Pelham.	Plainfield,	Prescott,	South Hadley, .	Southampton,	Ware,	Westhampton, .

\$178 22	<b>\$</b> 641 96	
\$2,000 00   143 20	2,651 40 \$3,500 00 135,809 54 \$10,010 08	
\$21,000 00   \$2,000 00 1,961 67 143 20	135,809 54	
11	\$3,500 00	
\$265 00 51 50	\$2,651 40	
	<b>\$2,597</b> 00	
\$3,000 00 1,000 00	\$52         55         \$28         92         \$80,205         00         \$2,597         00         \$2,651         40         \$3,500         00         135,809         54         \$10,010         \$6±1         96	
\$34 00 28 00	\$28 92	
\$37 00	\$52 55	
8.8 6.9	•	
04.15	7.16	
Worthington,	Total, .	•

# HAMPSHIRE COUNTY-Concluded.

	,bed.	propries	Ids woH	Schools.	3	*	3	3	z	3	3	3	3	*	*	3	*	3	3	3	*	3	z	;
		<b>bele</b> p	Town's: Fund, sry 25,	95	241 72	145 84	162 34	324 76	138 29	118 45	151 43	127 67	222 45	182 18	156 75	145 00	649 88	134 38	125 16	126 88	244 52	169 05	295 12	
UNINCOR. ACADEMIES AND	PRIVATE RCHOOLS.	A comments A	for Taltion.	\$100 00 ·	ı	•	1	350 00	1	ı	1	•	200 00	1		•	2,160 00	46 00		90 90	,	•	ı	
COR. AC	RIVATE	.oM e	Average of Sch	10	1	ı	ı	52	ı	1	•	1	ю	ı	ı	1	22	2	•	14	1	1	ı	7
UNIN	14	•2	Number	-	1	ı	ı	-	ı	ı	ı	ı	-	i	ı	_	12	-	1	-	ı	ı	ı	_
	INCORP. ACADEMIES.	Ageregate naid	for Tuttion.	1	,	,	1	<b>\$7,481</b> 50		•	ı		,	ı	•	,	•	,	,		2,500 00	,	1	,
	CORP. A	o Mo.	Average of Sci	ı	•	1	•	160	1	1	ı	1	88	ı	1	ı	ı	•	1	1	250	•	1	1
	NI I	.1	Number	1	1	ı	ı	-	1	1	ı	ı	_	1	ı	ı	,	ı	1	ı	-	1	ı	1
	zį.	Salare of Prin-	cipal	\$1,200 00	2,000	1	ı	00 00 8		1	325 00		1,000 00		1	1	2,250 00	•	,	ı		821 00	1,100 00 2	
00100	нісн всноога	LENGTH	Months	9.5	8	ı	ı	9.10	ı	ı	6.10	1	108	ı	1	ı	10.5	1	1	1	1	€	200	 ,
HOAR	<b>H</b> 0IH	How	supported.	Taxation,	Taxation,	ı	1	Taxation,	1	1	Taxation,	•	Not by Tax.,	1	ı	١	Taxation,	1	ı	1	1	Taxation,	Taxation,	•
		· ·	Nambe	-	7	,	ı	-	1	1	_	1	_	•	1	ı	-	ı	1	ı	1	7	61	ī
				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	٠	•	•	•	•	-
		TOWNS.		Amberst, .	Belchertown,	Chesterfield,	Cummington,	Easthampton,	Enfield,	Gospen,	Granby,	Greenwich, .	Hadley,	Hatfield,	Huntington,	Middlefield,	Northampton,	Pelham,	Plainfield,	Prescott,	South Hadley,	Southampton,	Ware,	v cstnampton,

ole.		,
Sep		
\$253 48   Schools. 150 87   "	<b>\$4,</b> §97 09	
1 1	\$3,299 00	
11	150	
1 1	19	
1 1	19,981 50	
1 1	448	
1 1	က	1
1 1		
1 1		
1 1		
1 1	8	
Williamsburg,	Total,	

## MIDDLESEX COUNTY.

of dif- persons ed as rs in Bch'ls.	Fem.	16	23	12	14	1	10	12	14	စ	23	ю	159	9	105	11	18	18	<b>a</b>	<b>œ</b>	24	53	8	8	14
Number ferent employe Teacher Public	Males.	-	4	တ	တ	ı	1	-	1	-	4	-	12	_	18	01	<u>α</u>	•		တ	લ	<b>œ</b>	<b>∞</b>	æ	_
de State des 5 and 15 years May I, 1870.	(TSOW)	804	675	200	894	1	162	278	855	69	. 847	103	8,086	115	6,081	461	421	888	86	482	744	. 749	665	1,076	677
over 15 years who attend bile Schoola.	of age	65	47	35	46	•	14	24	6	58	7	22	919	22	314	88	88	∞	11	8	73	118	86	2	67
ander 5 years who attend bile Schoola.	Of age	4	ī	7	ဆ	ī	-	10	20	4	1	<b>C</b> 1	ı	တ	ı	14	61	15	*	64	12	44	88	88	<b>~</b>
attendance in al'd 8 oliduT -loodo8 edt	edt [[a	271	208	164	309	•	122	242	230	72	872	104	5,888	100	4,557	885	817	279	88	841	628	584	612	864	219
-lond Renol- sloodos silda' -loodos saft	I at era	854	289	239	472	1	191	840	304	66	915	120	9,442	120	7,815	622	425	429	84	542	954	196	742	1.016	786
-9A rot blaq Or81 at,3&,					526 50	•		280 98		_	_		8,882 10	-		_							865 00		499 86
expended in or Brecting Houses.	1870	\$3,100 00			916 17		ı	•		1,534 38		1	26,882 74	;	76,345 28	4,200 00		1,150 00	•	ı	1	80,000 00	ı	1	1
noon.	No. of 80	11	13	6	a	1	8	-	6	4	17	2	8	2	46	14	12	13	20	0	8	18	18	<b>64</b>	2
Valuation-1965.					682,632	1	489,123	8,521,429	1,086,563	288,592	8,812,694	408	25,897,971	354,122	18,292,544	546	1,658,881	1,109,304	891,146		2.799.308	1.558.920	1,502,682	1,505,257	
.6 .U—noth		1,593	8,261	994	2,186	1	840	1,513	1,833	338	4,967	626	89,634	269	28.328	2,874	2,412	2.078	471	2.220	4.968	8,584	8,073	4,410	3,380
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-	•	•	•
TOWNS.		Acton, .	Arlington.	Ashby.	Ashland,	Aver.	Bedford,	Belmont, .	Billerica,	Box borough.	Brighton,	Burlington.	Cambridge,	Carlisle,	Charlestown.	Chelmsford,	Concord.	Dracut.	Dunatable.	Everett.+	Framingham.	Groton.	Holliston.	Hopkinton, .	Hudson,

† Incorporated in 1870. Beturns included in Malden.

	တ	ĸ	12	115	88	88	1	18	15	88	8	90	15	52	2	6	82	18	œ	17	12	10	8	16	88	18	15	16	2	∞	13	87	1,285
	<b>~</b>	1	ı	14	4	10	i	80	-	တ	2	1	-	-	-	8	7	-	1	1	1	ဓာ	-	-	€	4	1	-	-	1	67	ō	159
1	930	148	204	6,437	1,417	1,877		1,117	642	1,428	2,386	178	880	547	308	808	2,570	280	387	878	242	872	107	787	1,420	876	287	368	196	151	283	1,844	62,211
,	884	23	35	595	83	\$	•	16	15	28	248	18	37	88	22	49	181	8	62	<b>8</b>	88	3	15	22	98	88	32	24	48	91	25	135	4,184
•	80	4	18	ı	-	19	1	ı	1	2	-	ıc.	<b>∞</b>	8	87	10	1	ខ	2	œ	6	17	20	81	18		æ	14	ص	တ	4	11	408
	787	118	175	4,617	1,102	1,128	1	801	539	1,058	1,979	186	240	488	221	225	2,348	609	236	268	164	299	87	20	1,291	201	174	228	174	128	446	1,412	89,598
	868	158	257	7.164	1,447	1,811		1,110	585	1,315	2,448	185	861	220	275	888	2,739	092	338	469	260	328	133	791	1,520	751	261	885	224	172	258	1,651	56,828
			100 66				1											380 00			_		15 00		_				_	29 50		1,591 13	\$71,868 66
-		_	8		_	-					8		8		8			8				77			8			8		8		9	77
'	•	000'8	3,860	83,150	7,100	5,652		1	٠	•	46,575		1,589		2,200		,	21,000 00		1	1	10,598		ŧ	6,500		•	1,800		1,649		20,144	8373,947
101	3 '	0	-	61	88	28	ī	18	13	24	51	8	10	14.	00	6	25	15	7	0	2	12	<b>∞</b>	13	22	13	~	11	~	20	==	88	842
81,747,459	200,000	000,000	682,380	20,980,041	4,040,481	2,580,622	. 1	5,491,054	1,704,588	1,841,121	9,800,738	677,389	724,405	1,293,056	869,639	676,275	5,683,244	1,383,637	764,278	1,052,778	747,624	737,852	848,137	1,778,786	5,552,109	2,757,957	628,078	998,488	1,108,274	568,181	1,455,772	4,986,549	\$155,824,723
2,277	101	10	983	40,928	7,367	8,474	. 1	5,717	8,414	6,404	12,825	942	1,842	2,664	1,062	1,451	14,685	4,518	1,813	2,091	1,944	1,962	629	4,135	9,065	4,326	1,240	1,808	1,261	888	2,645	8,560	274,858
•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
'uoidinvor	Tillicoln.		Littleton,	Lowell,	Malden,	Marlborough,	Maynard,t	Medford,	Melrose,	Natick,	Newton,	No. Reading,	Pepperell, .	Reading,	Sherborn,	Shirley,	Somerville, .	Stoneham,	Stow, .	Sudpary, .	Tewksbury,	Townsend, .	Tyngsborough,	Wakefield,	Waltham, .	Watertown,	Wayland,	Westford,	Weston,	Wilmington,	Winchester,	Woburn,	Total, .

• Incorporated in 1871. Returns included in Groton and Shirley. 

† Incorporated in 1871. Beturns included in Stow and Sudbury.

MIDDLESEX COUNTY-CONTINUED.

Income of Funds, ap- propriated to Public Schools as the option of the Town, includ- ing Tax on dogs.	889 25	1	,	1	1	70 08	•	ı	,		i	,	ŀ	1	1	ı	٠,	ı	1	1	,	1	1	ı
lacome from Local Bohool Funda.	1	\$309 82	1	1	•	1	1	1.260 00	1	ı	1	894 38	90 98	886 00	1	94 48	ı	•	1	255 54	2,835 00		800	1
Am't of School Funds, the income of which can be appropriated only for the aupport of Academies and Schools.	1	\$5,354 00		ı	,	ı	•	21,000 00	1	,	,			5,600 00	1	1,581 59		,	,	4.259 00	40,500 00	1	<b>5</b> ,000 00	,
Salary of Superintend- ent of Public Soh'le.		800 00		1	1	١	1	ì	25 00	1	ı	2,800 00	1	2,500 00	125 00	100 00	1	ı	,	,	,	,	ı	-
Expenses of Superin- tendence by School C'mittees and print- ing School Esports.		92 92 93			1	118 50	845 00	129 88	90 90	200	8 8	865 00	8 8	,	158 88	98 98	875 00	42 75	ı		250 00			
Amount of board, fuel, feel, vointerfly con- tributed for Public Schools.	1	1	1	,	1	,	,	ì	•	,	,	ı			,	,	ı	<b>\$12</b> 00	,	ı	45 00	,	,	1
Releed by Texes for Schools, including wages of Teachers, board, fuel, care of free and school- rooms, for the school- year 1810-71.	\$2,325 00	11,457 59	1,200 00	4,000 00	•	1,800 00	6,150 00	2,600 00	150 70	_	1,100 00	110,951 98	දු		8	8	8	8	8	8	00 000	8	8	8
onth, Value		50 89										88 88												
Average Wages Teachers per m including the of Board. Males. Ferr		150 71			ı	ı	124 50	•				212 17					ı	ı	_		49 65	-		
Average Length as retained by Com- mittee.	6.19	10.10	5.19	7.18	ı	7.18	10	7.16	6.10	10.5	6.4	2	9	10.10	6.17	9.8	ტ ფ	6.10	10.10	8 11	2.6	<b>8</b> 0	8.5	<b>8</b> 0
Aggregate Length of Public Schools for the year, in Months and Days.	75.10	183.10	58 12	69.3	ı	47	2	888	<b>5</b> 8	174.5	82 10	295	င္တ	488	98	120.10	76.19	82.10	94.10	171	188.0	183.12	178.6	100.15
w.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	٠	•	•	٠	•	•	•	•	•
H O H	Acton, .	Arlington, .	Ashby,	Ashland,	Ayer, .	Bedford,	Belmont, .	Billerica,	Boxborough,	Brighton,	Burlington, .	Cambridge, .	Carlisle,	Charlestown,	Chelmeford,	Concord,	Dracut,	Dunstable, .	Everett,	Framingham	Groton,	Mollinton,	Hopkinton, .	Hudmon, .

	ı	1 (		ı	1	1	,	1	1	1		ı	1	•	ı	1	1	ı	1	<b>2</b> 97 27	ı	ı	1	,	1	ı	119 50	ı	ı	1	,	\$376 08
-	01.01.0	07 0510	,	1	144 00	,	ı	ı	i	1	ı	1	1	300 00	420 00	1	1	1	90	,	1	154 00	ı	,	1	12 00	1,200 00	1		1	1,750 00	\$10,508 40
,	1000 01	17 807(14	1	,	2,400 00		ı	1	1	ı	1	1	ı	2,000 00	2,000 00	ı	ı	1	1,000 00	,	1	1,111 11	,	j	ı	200 00	20,000 00	1	ı	,	25,000 00	156,714 91
	1		2,000 00		ı	1	1	1	ı	1	1	1	1	,	1	1,650 00	•	100 00	1	1	,	,	1	1	ı	1	,	1	!	,	1,200 00	10,935 00
<b>2</b> 081		08 24			590 75	1	815 00	280 00	578 95													87 00										\$16,071 47
•	1	1	ı	1	1	ı	1	•	ı	i	1	1	00 008	ı	ı	1	ı	1	,	1	1	1	•	1	•	12 00	1	1	•	ı	1	<b>\$369</b> 00
00 000 28		1.700 00			16,000 00		19,740 00	8,200 00	11,900 00	64,000 00	1,400 00			2,000 00			8,750 00	2,000 00	2,800 00	1,800 00	3,000 00	1,050 00	7,500 00	25,234 77	14,000 00	2,000 00	2,500 00	8,183 00	1,075 00	00 000'6	19,314 95	\$687,318 69
833 08		30 45		40 74	41 73	,	87 50	42 77														24 00										<b>\$</b> 36 46
110 00		1	163 87	135 41		ı		180 00				40 00						ı	40 00	1	50 33	65 00	140 00	175 64	125 00	1	20 80	100 80	1	148 75	118 60	\$106 88
9.14		6.19	10 10	10.5	8.17	1	10.8	10	8.7	9.12	7.15	8	8.5	7. 8:	•	10.10	8.6	<b>∞</b>	8.4	8.15	8	4.16	2	10.1	<b>a</b>	& &	<b>∞</b>	22	6.13	0.7	<u>م</u>	'
97.3	415	46.18	641	264.10	258 15	ı	196.16	130	201.8	499.4	46.10	8	127.10	62.5	54.14	516.10	149.15	26	73.18	61.5	72 6	38.10	128 17	251.5	120	58.14	88	64.15	33.5	86	303.15	8.19
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	<u>.</u>	•	٠	•	•	•	•	•	•	•	•
Lexington,	TIBOOUL .	Littleton,	Lowell.	Malden.	Mariborough,	Maynard,	Medford,	Melrose,	Natick,	Newton,	No. Reading,	Pepperell,	Reading,	Sherborn,	Shirley, .	Somerville, .	Stoneham,	Stow,	Sudbury, .	Tewksbury,	Townsend, .	Tyngsborough,	Wakefield, .	Waltham, .	Watertown,	Wayland,	Westford,	Weston,	Wilmington,	Winchester,	Woburn, .	Total, .

MIDDLESEX COUNTY-Concluded.

rted.	Hoproprie	Schools.	3 :	3	3	•	Schools.	3	3	3	3	3	City Treas.	Schools.	3	3	3	3	3	1	Schools.	:	3	3	:
1	Town's share of Town's share of Town's share of 1811.	\$185 54	269 70	149 76	198 12	1	148 92	178 27	193 86	123 20	824 47	128 18	2,216 29	134 66	1,757 42	215 15	216 44	201 47	121 80	1	810 77	298 75	281 60	850 14	278 06
UNINCOR, ACADEMIES AND PRIVATE SCHOOLS.	Aggregate paid for Tuition.	1	1	,	1	,	\$250 00	2,000 00	1	1	ı	,	24,364 00		8,100 00		,	128 00	ı	ı	,	90 00	•		426 00
COR. AC	Average No. stalodos lo	1	ł	ı	•	•	15	8	ı	1	1	1	616	1	8	1	1	22	ı	•	ī	20	1	1	9
UNIN	Уитрег.	1	1	ı	ı	ı	-	61	ī	ı	ı	ı	18	1	တ	ī	1	4	1	ı	1	-		1 1	-
INCORP. ACADEMIES.	Aggregate paid for Tuition.	1	ı	1	ı	,	i	•	\$240 00	,	,	•	ī		1	•	,	,	1	,	,	ı	ı	1 1	
CORP.	Average No.		ı	,	•	1	1	ı	40	1	1	1	1	ı	1	ı	1	1	ı	1	1	ı	•		1 1
Ni Ni	Namber.	•	ı	ı	1	1	ı	,	_	1	ı	ı	ı	1	•	1	ı	,	ı	ı	•	-	1 1		-
ું જું	Salary of Prin- cipal.	'	\$1,900 00	ı	1,000 00	,	1	1,245 00	1	1	1,700 00		8,250 00	1	2,500 00		1,200 00	1	1	ı	1,200 00 }				
нісн всноод	Months.	1	10.5	ı	9.18	1	1	2	1	•	10.5	ı	10	,	10.10	1	9.18	•	,	•	91	2	35	2 3	10.01
нон	How supported.	t	Taxation,	1	Taxation,	1	ı	Taxation,		ı	Taxation,	1	Taxation,		Taxation,	ı	Taxation,		•	1	Taxation.	Taxation	Texation	I BARRIOUS	Taxation,
	Number.	1	-	,	-		1	-	1	1	-	1	-	1	7	1	_	1	ı	ı	0)	-	٠.	٠,	
	TOWNS.	Acton.	Arlington,	Ashby.	Ashland,	Aver.	Bedford.	Belmont,	Billerica,	Boxborough.	Brighton.	Burlington.	Cambridge, .	Carliele.	Charlestown,	Chelmsford.	Concord.	Dracut.	Dunstable.	Everett,	Framingham,	O motor	Trillian	T. C. C. C. C. C. C. C. C. C. C. C. C. C.	Hudson,

Schools.	3	3	3	3	3	•	Schools.	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	z	3	3	3	z		y	3		
\$206 22	186 33	157 86	1,828 64	605 71	678 29	1	899 85	272 18	477 84	671 11	157 58	186 26	245 35	160 93	193 07	801 85	301 81	204 82	205 10	176 30	,	129 64	800 14	477 88	824 17	160 93	188 60	156 46	146 96	255 41	596 41		\$18,977 46
\$750 00	•	,	6.750 00	850 00	225 00	1	800	•	100 00	8.770 00	,	350 00	20		120 00	675 00	,	1.200 00	800 00	'	125 00	,	,	1,550 00	200 00	•	1		1	800 00	480 00		\$47,622 00
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•			\$822 00		ı	ı	1		•	15,000 00		1	1	ı			ı	ı				•		8.500 00		•	645 00	1			1		\$20,207 00
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9.16	8 10	3	10 10	10.5	10	, 1	10.5	1	2	0 19	7 15	1	•	410	2 1	10.10	120	0.10	)	)	•	1	2	1010	3	, 1		о ж	9.	1	25	2	1
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Lexington.	I con I	Timboun,	Tomoli .	Maldon	Maribonomah	Married	Madford	Mellord,	Metion.	Nonten	No Donding	Dennerall	Perding.	Short of State of Sta	Suerooru,	Suiriey,	Comervine, .	Store mann,	Stow, .	To-beh.	Townsond	T.m.m.bonu.	Wabefold	Waltham	Wetertown	Wawland	Westford	Worten	Wilmington	Windhotte.	Wohim		Total,

. Includes one Catholic school of 420 pupils.

#### COUNTY. NANTUCKET

F 4 1 1 1		DUA
r of dif- ; persons yed as iers in	Fem.	21
Number of dif- ferent persons employed as Teachers in Public Sch'is.	Males.	4
he State be- sand 15 years May 1, 1870.	CW66D	655
erace is years who attend also Schools.	ega lo	08
under 5 years who attend olic Schools.	of age	ı
attendance in Public School- -foodbe School-		503
-forb fichol- slochos bildu -foodos edt		169
pald for Re-		
expended in for Erecting	1870	ı
,aloods,	No. of 8	10
Valuation-1965.		\$2,152,568
.8 .U—notta .0781 ,aus	Popul	4,123
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TOWNB.		Nantucket, .

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	29															
13	16	ŭ	<b>∞</b>	တ	9	8	17	15	1	ı	က	_	7	9	1	23
175	555	878	299	306	1,077	85	882	406	746	144	220	488	688	182	1,120	792
275	786	975	992	428	1.428	185	808	559	947	218	788	495	818	204	1,521	1,170
8	8	8	96	22	8	8	22	8		9		12	88	62	7	8
008	516 81	3,500													1,806	1,200
}	\$8,790 13									1					1	i
	17	ಜ	16	9	8	4	10	138	8	4	15	1	17	8	22	- 28
8463.951	1,582,530	12,107,550	2,211,313	1,174,958	4,857,587	358,774	1,284,524	1,046,874	•	618,185	1,251,898	4,271,268	1,798,498	•	8,888,608	2,925,254
1.282	3,948	6,650	8,879	2,130	7,842	645	8,057	2,612	4,136	1,142	8,721	2,683	8,607	1,081	7,442	6,612
-	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
ellingham.	raintree, .	rookline,	anton,	ohasset,	edham,	lover,	ox borough,	ranklin,	Iyde Park, .	fedfield,	fedway,	filton,	eedham,	lorfolk,	Juiney,	Landolph, .

•	
21 131 855 133	430
	<b>26</b>
297 1,128 395 1,880 1,903 429	18,045
12 70 87 139 107	1,198
02 1 1 C	168
180 878 294 1,306 1,498	13,874
288 1,105 1,599 2,002 469	18,038
90 818 00 90 818 00	2
8218 960 8,768 8,768 8,616	\$21,756
\$19,589 81 14,856 09	\$95,308 65
84 12 12 13 14 15	363
\$728,782 1,742,453 1,182,102 10,681,146 8,346,849 1,412,051	\$58,767,980
1,508 4,914 2,187 8,688 9,010 2,292	89,443
• • • • • •	•
Sharon, Stoughton, . Walpole, . West Roxbury, Weymouth, .	Total, .

. Included in towns of which they were a part before incorporated.

## NANTUCKET COUNTY-CONTINUED.

of Funds, sp- tied to Public s at the option Town, includ- z on dogs.	propria School of the	9
from Local	отоопі Ісопові	<b>\$</b> 2,000 00
School Funda, ome of which appropriated r the support ademies and	Am't of state of the can be ca	\$40,000 00
Superintend- Public Sch'ls.		8
s of Superin- ce by School cool Reports.	nebrast utim'O	\$100 00
of board, fuel, funtarily con- d for Public s.	OA '''D29	ł
Torses for to the first state of Teachers, for the school-loods and school-loods and school-loods at 17-05.	Halsed   School Wages Doard, fires rooms, year lg	\$8,000 00
age Wages of inchers per month, luding the Value Board.	Females.	\$28 12
Average Teachers including of Board.	Males.	\$74 42
ed by Com-	A verage return mittee.	,
Schools for		10.6
HOWNB.		Nantucket,

-CONTINUED.	
COUNTY	
NORFOLK	

Bellingbam,		9	7.10	\$42 50			1		1	\$418 16	\$25 09	<b>\$14</b> 0 68
Braintree, .	_	143.9	8.17	118 27					١	4,500 00	400 00	•
Brookline, .	_	8	20	190 00			ı		ı		1	ı
Canton.	_	158.8	9.18	82 50			1		<b>\$</b> 150 00	1	,	ı
Cohasset,	-	8	201	68 50			\$235 00	•	1	1,000 00	00 09	,
Dedham,	-	<b>30</b> 4	102	115 00			1		ı	1,100 00	98	
Dover,	•	27.18	6.18	1			ı		ı	1	1	77 10
Foxborough.	-	88 10	8 10	22 22			ı		1	1	ı	188 85
Franklin,	-	98.15	7.12	25 00	40 79	4,000.00	22 00	279 00	,	ı		ı
Hyde Park.	_	.936	10.4	132 50			1		ı	,	ı	ı
Medfield,	•	28.10	6.18	00 06			ı		ı	8,750 00	226 00	ı
Medway,	-	117.10	7.17	64 52			)		ı	•	ı	•
Milton,	-	8	9.0	118 15			1		1	,	,	ı
North Party	-	167.19	9 10	110 00		_	,		1	ı	,	1
Onings.	-	2	7.10	86 00		_	ı		ł	ı	1	
Camillo 1	•	603	10.15	96 18			ı		ı	1,250 00	75 00	ı
. didionista		210.10	0.10	88			1		•	27,000,00	1.771 85	•

\$270 17 	1 1	228 22	\$894 97
	4,000 252 00		<b>\$7</b> ,185 49
\$1,860 00	58,000 4,200 00 10 10 10 10 10 10 10 10 10 10 10 1		105,080 12
111	' '	1	\$150 00
\$105 00 282 50 125 00			710 00 <b>\$8</b> ,159 80
\$120 00	800 00		<b>\$7</b> 10 00
8,000 00 4,500 00	20,000 20,000 20,000 20,000	- 1	\$216,877 54
88 95 88 95 88 67	85 FO	81 79	<b>\$</b> 36 96
948 00 99 82 75 83			\$95 65
8.19 8.19	10 9.14	7.14	ı
54 170.2 90.5	810 858	98.10	9.5
• • •		•	•
Sharon, Stoughton, Walpole,	West Koxbury Weymouth,	Wrentham, .	Total, .

# NANTUCKET COUNTY-CONCLUBED.

.ted.	sliqorqqa woH	·Schools.		Schools.	3	Treasury.	Schools.	3	3	3	3	3	3	3	3	3	3	1	;	3
11	Town's share or Fund, payabl ary 26, 1871.	\$261 56				402 46											288 67	1	580 77	487 45
UNINCOR ACADEMIES AND PRIVATE SCHOOLS.	Aggregate paid for Tuition.	\$500 00		ı	<b>8</b> 400 00	2,000 00	800 00	200 00	2,000 00	,	1,800 00		360 00	•	1		2,000 00	,	1.000 00	-
COR. AC	Average No. of Scholars.	90		1	8	2	15	-	22	•	28	1	18	1	1	ł	20	•	8	; •
UNIX	Namber.	67	UDEI	ı	-	8	-	7	4	1	<b>C7</b>	ı	<b>C</b> 1	ı	ı	1	1	1	a	1 1
INCORP. ACADEMIES.	Agregate paid for Taition.	\$350 00	COUNTY-CONGLUDED	•	•	1	1	•	ı	,	1	\$5,329 30		t	•	,	ı		•	
CORP. 4	Average No.	08	COL	1	ı	1	1	1	1	1	ı	122	1	1	1	1	ı	ı	•	1
Ě	Number.	1	LK	ı	1	ı	1	ı	ı	1	ı	_	ı	ı	ı	ı	ı	1	. 1	1
	Salary of Prin-	\$1,000 00	NORFOLK	1	\$1,100 00	2,500 60	1,200 00	1,000 00	1,800 00		975 00	675 83	1,700 00	800	1,000 00	1,400 00	1,100 00*	•	000	000,1
нісн вснооця.	Months.	10.15		١	9.5	9	9.17	2	10.2	,	0	9.10	10 10	2	<b>a</b>	9.0	2 20	2 1	_	10:12
нен	How supported.	Taxation,		1	Taxation,	Taxation,	Taxation,	Taxation,	Taxation,		Taxation,	Taxation,	Taxation,	Taxation,	Taxation,	Taxation,	Tax'n, {	ا	Tampion	Taxation,
	Number.	7		1	-	-	-	-	-	1	-	-	-	-	~	_	લં		-	4-4
	•	•		•	•	•	•	•	•	•	٠	•	•	•	•	•	•		•	•
	TOWMB.	Nantucket, .		Bellingham,	Braintree.	Brookline, .	Canton,	Cohasset,	Dedbam,	Dover.	Foxborough,	Franklin,	Hyde Park,	Medfield,	Medway,	Milton,	Needbam, .	Norfolk	Oning	Handolph,

Aghton, . 1 Taxation, 9 \$1.200 00 4 \$1.200 00   2.400 00   2.400 00   2.400 00   3.400   3.400	ols.	
Taxation, 9	Schoo	
Taxation, 9	176 86 420 91 209 00 495 80 629 45 258 49	109 08
Taxation, 9 11,200 00 1 4 91 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		<u>                                     </u>
Taxation, 9 11,200 00 1 4 91 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	850 00 - 000 000,	410 00
Taxation, 9 11,200 00 1 1	10	<u>S</u>
Taxation, 9 81,200 00	91 19	441
Taxation, 9 81,200 00   Taxation, 9 1.200 00	-11411	83
Taxation, 9 81,200 00   Taxation, 9 1.200 00		88
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Taxation, 9 81,200 In part Tax, 10 2,400 Tax'n, { 9.15 1,200 Tax'n, { 9.15 1,200 Taxation, 9 1,100 1,200 Taxation, 9 1,100	11111	67
Taxation, Taxation, In part Tax Tax'n, Taxation	\$1,200 00 1,200 00 2,400 00 1,200 00 1,200 00 1,100 00	
Taxation, Taxation, In part Tax Tax'n, Taxation	9.15 9.15 10 10 9.15	'
ughton,	Taxation, Taxation, In part Tax, Tax'n, Taxation,	
ughton,	0 -	21
	ughton,	Total,

Average.

PLYMOUTH COUNTY.

fumber of dif- ferent persons employed as Teachers in Public Sch'ls.	Fem.	48	<b>5</b> 4	1	13	18	2	Ξ	13	2		2	14	_	18	=	8	85	13	84	စ	æ	14	1
Number ferent employ Teache Public	Malos.	10	90	တ	67	_	1	67	81	2	-	61	•	1	,	-	8	4		0		1	C1	C)
he State be- sand is years May I, 1870.	Teem?	2,135	878	194	417	629	118	322	208	784	41	289	202	192	295	276	066	1,589	276	1.142	170	188	467	201
over 15 years who attend	Of age	101	24	8	48	12	8	. 28	<b>a</b>	2	-	68	14	23	28	42	74	23	22	112	27	8	22	42
under 5 years who attend bile Schools,	98# JO	78	18	~	18	6	1	<b>∞</b>	=	4	4	တ	9	20	8	တ	15	17	2	18	01	10	14	<b>*</b> 0
ni sonabnesta ai'ne Schorf -isones sait	edt fla	1,596	538	156	298	487	85	248	149	480	22	262	168	159	252	226	681	1,121	199	934	125	108	844	808
ferent Schol- aloches School- the School-	[ nt era	1,897	791	205	448	289	117	334	197	740	37	837	224	221	883	286	828	1,449	268	1,156	167	187	450	707
paid for Re- , &c., in 1870.		\$2,000 00		1							_		_	_		_	_		_	_	_		846 70	
expended in for Erecting Houses.	1810	\$19,480 77	7,266 76		ı	ı	•		•	•	ı	,	420 00	,	,	651 00		18,504 89	,	,			ı	
stoods	No. of 8	40	18	-	2	13	20	a	~	138	-	00	11	9	2	2	22	58	90	80	9	0	=	-
Valuation-1865.		\$3,059,801	1,992,758	459,583	1,006,782	1,136,937	854,039	747,591	458,168	2,891,437	150,864	1,884,298	671,124	429,009	858,777	540,118	2,132,878	2,209,839	675,993	8,145,119	804,305	547,181	862,106	\$26'01R
.8 .U—nolia .0781 ,ana	-	9,308	3,660	1,092	2,341	8,017	619	1,628	1,219	4,422	261	1,604	1,159	896	1,659	1,861	4,687	8,007	1.447	6,289	803	1,024	2,850	1,00,1
HOWNS.		Abington,	Bridgewater, .	Carver,	Duxbury,	E. Bridgewater, .	Halifax,	Hanover,	Hanson,	Hingham,	Hull,	Kingston, .	Lakeville,	Marion,	Marshfield,	Mattapoisett, .	Middleborough, .	N. Bridgewater, .	Pembroke,	Plymouth,	Plympton,	Kochester.	Beituate,	Bouth Boituate,

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625 877	12,846		46,301 8,106 191 124	49,722
45	1,061		2,165 208 6 8	2,377
13	588		1140	7
531 288	9,615		83,808 2,670 186 88	86,197
701	12,766	TY.	85,933 2,985 211 125	89,254
\$400 00 214 85	\$12,008 12	K COUNTY	\$98,457 00 10,000 00 828 86 111 57	\$108,897 43
1 1	\$47,952 92	SUFFOLK	\$585,413 00 - -	\$535,418 00
14	308		888 455 4 4	431
\$882,580 945,350	\$27,932,058		*\$414,638,171 7,706,745 860,359 406,289	\$423,606,514
8,098 1,808	65,865		250,526 18,547 1,197 532	270,802
Wareham, W. Bridgewater, .	Total, .		Boston, Chelsea, Revere, Winthrop,	Total,

† Returns of 1869-70; no returns made for 1870-71.

· Includes the valuation of Dorchester and Roxbury.

### PLYMOUTH COUNTY-CONTINUED.

ne of Funds, ap- prieted to Public soles at the option of Town, includ- action degs.	prop Bcb of ti				•	1	,		1	,	1	\$74 50		1		ı	1	ı		1	•		,	ı
e from Local			8228 00	1	1.600 00		1	182 00		2,200 00	1	ı	ı	1	1	598 00	1.600 00	17 19	ı	1	•	•	1	1
of School Funds, of School of which the of which of the support A cademies and aloos.	off nao (ino )	1	83.800 00	1.000 00	23,000 00	,	ı	2,200 00	1	83,000 00	,	ı	1	1	,	8,552 00	20,900 00		1	1	,	•	1	1
y of Superintend- of Public Sch'le.		,	,	,	ı	ı	1	,	ı	1	1	\$200 00	,	20 00	ı	1	,	1	1	1,150 00	1	ı	100 00	,
nases of Superin- dence by School nittees and print- School Reports.	ten G'n	8785 00					_	-	_	400 00	_	_	_	_		_			_	_	_	-	-	-
unt of board, fuel, ,, voluntarily con- puted for Public	.o.sb thi	ı	ı	1	,	\$1,140 00	•	1	ı	,	ı	ı	•	ı	•	ı	1	1	ł	,	ı	1	,	,
of by Taxes for for foot, from from from from from from from from	BOD BOD BOD BOD BOD	\$14,000 00	8	100	2,000 00	8	8	2,700 00	_	6,485 34	820 00	_		1,000 00				14,250 00						3
verage Wages of Teachers per month, including the Value of Board.	Females.	_	_	_			_		-	84 00	_	-	_	-		_		_	-			_		
Average Teachers including of Board.	Males.	\$79 28								25 62			1	1		82 00			ı	94 66	1		71 68	
rage Length as unned by Com- ttee.		8.13	8 15	9.9	7 19	8 17	6.15	6	7.14	10.15	300	6.0		9	010	<b>5</b>	4.6	8.10	8.10	9.0	6.9	7.7	01.6	0.11
regate Length of bild Schools for byear, in Months Days.	L the	838.11	156 17	48.18	79.10	115	38.15	83	53 15	182.6	3	74.8	9 2	87.10	91.87	42	200.13	239.10	£	273.10	88.12	44.7	101.5	01.00
TOWMS.		Abington,	Bridgewater,	Carver,	Duxpury,	E. Bridgewater,	Halifax,	Hanover,	Hanson,	Hingham, .	T. T. T.	Aingston,	Transferring,	Marion,	Marsoneld,	Marcaponeett,	M to :	D. Dridgewater,	remoroke, .	L'ymouth,	L'iympton,	Mochester,	Scientife,	· 'entra sciente'

1012	•1		TODLIC DO
, 1 1	\$74 50		
\$6,280 00	\$11,655 19		\$499 82 - - - - - - - - - - - - - - - - - - -
\$89 00 \$80,000 00 \$6,280 00	\$172,738 50		\$3,147 70 \$4,250 00 \$7,100 00 \$499 82 1,350 00
	\$1,589 00		#4,250 00  #4,250 00
\$155 00 119 00	\$4,084 86	TINUED.	\$3,147 70 1,850 00 65 00 87 00 \$4,599 70
1 1	\$1,140 00	INTX—Cor	1111
93.15   6.14   \$80 00   \$26 96   \$4,000 00   \$12   \$2 50   \$3,000 00   \$1 67   \$2 50   \$1,000 00   \$1 67   \$1	\$67 15 \$29 66 \$102,678 64 \$1,140 00 \$4,084 86 \$1,589 00 \$172,738 50 \$11,655 19	SUFFOLK COUNTY-CONTINUED.	\$247 59 \$67 92 \$906,000 00 175 00 45 00 42,605 00 85 23 41 66 2,700 00 1,400 00 1,400 00 172 61 \$47 65 \$852,705 00
\$28 96 82 50	\$29 66	SUF	\$67 92 45 00 41 66 85 00
\$80 00 61 67	\$67 15		10 16 <b>4247</b> 59 10 10 175 00 10 10 95 28 8 8 -
6.14 8	1		10 16 10 10 10 10 8 8
98.15	8.5		8,984 577.10 42 82.15
ter,	•		
Wareham, . W. Bridgewal	Total, .		Boston, Chelsea, Revere, Winthrop, Total,

PLYMOUTH COUNTY-Concluded.

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	Town's share o Fund, payab ary 26, 1811.	00 0889	044	2/4 /I	211 54	266 88	180 75	184 98	165 40	•	111 74	188 34	157 58	151 99	186 38	177 44	861 68	504 20	179 88	897 48	144 73	150 87	221 87	184 14
UNINCOR, ACADEMIES AND PRIVATE SCHOOLS.	Aggregate paid for Tuition.		000	00 2000	270 00	,	•	,	1	90 00g	ı	1,000 00	1	22 00	ı	ı	1,000 00	462 00	812 00	1,200 00		,	ı	1
COR. AC.	Average No. of Scholars.		-	*	80	,	1	1	ŧ	8	1	14	ı	20	1	ı	20	35	88	8	١	١	١	1
UNIN	Упшрег.			-	-	ı	•	1	ı	-	ı	-	ı	Q	ı	ı	01	-	<b>C</b> 3	4	ı	. 1	ı	1
INCORP. ACADEMIES.	Aggregate paid for Tuition.		200	00 008'T	1 1	ı	1	220 00	i	224 00	,	1	,	,	,	,	200 80	1	,	,	•	1		1
CORP. A	Average No.		9	70	1	ı	1	8	1	28	ı	ı	1	1	1		22	ı	1	1	1		   (	1
NI NI	Number.		-	-	-		ı	Н	1	_	1	1	ı	1	1	ı	Н	1	ı	ı	1	, ,	1 1	1
šý.	Salary of Prin- cipal.	1000 000	1,000 000	00 00e'T	1.000 00	1,100 00	1	750 00	1		1	00 006	1		1	1	1,200 00	1,500 00		1.500 00		1 1	1 00	2
нісн всноод.	Months.	10			9.15	10	ı	<b>a</b>	ı		1	9.10	1	1	1	,	10	10	,	10				2 -
ноін	How supported.	Toriginal	Tone tion	raxation,	In part Tax.	Taxation,		Taxation,	1	•	•	Taxation,	•	t	1	ı	Taxation,	Taxation.	1	Taxation.		•	Taradian	T BANKIOUS
	Number.	_	H	-	-	-	ı	-	ī	1	ī	-	ı	ı	ı	ī	-	7	•	-			-	1 1
	10 W N B.	Ahinatan	D. J.	Dridgewater,	Duxhire.	E. Bridgewater.	Halifax.	Hanover,	Hanson,	Hingham,	Hull,	Kingston,	Lakeville	Marion,	Marshfield, .	Mattapoisett,	Middleborough, .	N. Bridgewater, .	Pembroka.	Plymouth.	Dimmiton	Port poor	Nochemer,	South Beituate,

Wareham, . W. Bridgewater,		Taxation,	2	1 Taxation, 10 81,050 00 -	1 1	1 1	1 1	41	110	4 110 \$180 00	\$271 91   Schools. 208 19   **	Schools.	
Total, .	<u> </u>	-		1	مر	178	\$3,074 00	61	441	178 <b>\$3,074</b> 00 19 441 <b>\$5,081</b> 00 <b>\$5,655</b> 42	\$5,655 42		_
				SUFFO	LK	COUN	SUFFOLK COUNTY-CONCLUDED.	JDED	و				
Boston, Chelses, Revere, Wintbrop,		5 Taxation, 10.9 - Taxation, 10.10	10.9	2,500 00 2,500 00	11111	11111	1111	78 8 - - 81	2,079	78 2,079 \$219,631 00 \$12,708 28 8 75 8,600 00 871 45 153 95 132 15 81 2,154 \$223,231 00 \$13,860 83	\$12,708 28‡ Schools. 871 45 ". 158 95 ". 132 16 ". \$13,800 83	Schools.	

### WORCESTER COUNTY.

10 W NB.	.0781 ,aus	Valantion-1965.	shools.	expended in or Erecting.	-9A Tof blaq .078[ nl ,.335 ,	forent schol- alocates school- foodog edit	Ritendance in Public Sch'le fac School-	ander 5 years who attend blic Schools.	over 15 years who attend blic Schools.	he State be- sand 15 years May 1, 1870.	Number of ferent persemployed Teachers Public 8ch	of dif- persons ed as rs in 8ch'is.
			No. of 8	1 0781		Trill era	all the	of age	ogs 10	199M3	Males.	Fem.
Ashburnham,	. 2,17	8788	11	ı		885	356	- <b>-</b>	9	405	4	18
Athol, .	. 8,517	7 1,085,516	16	1	1,900 00	535	463	<b>œ</b>	75	629	•	22
Auburn, .	1,17	203	9	ı	_	212	167	67	88	223	ı	2
Barre, .	2,57	1,797	15	\$1,800 00	_	. 462	375	9	65	426	8	18
Berlin,	. 1,010	401	io.			235	133	<b>CN</b>	48	219	81	œ
Blackstone, .	5,42	1,993	188	8,322 53		1,354	199	2	28	1,042	ক	18
Bolton, .	1,01	636	œ	ı	72 86	216	165	<b>∞</b>	43	176	_	2
Boylston, .	. 804	467	20	•		210	113	8	88	154	ı	20
Brookfield, .	2,52	973	13	ı		411	851	8	61	433	83	17
Charlton, .	1,87	606	13	ı		442	813	81	8	301	00	œ
Clinton, .	5,42	2,017	15	ı	1,135 38	1,118	742	1	22	1,069	_	18
Dana,	. 75	242	9	ı		145	118	-	22	151	63	<b>6</b>
Douglas, .	. 2,18:	871	18	ı		417	811	16	22	415	۵	18
Dudley, .	2,38	681	2	ı		299	826	8	31	298	ю	18
Fitchburg, .	. 11,26	4,240	87	19,058 18		2,231	1,589	52	220	2,105	7	47
Gardner, .	8,33	902	14	60 969		962	632	17	155	648	83	18
Grafton, .	4,59	1,777	18	6,489 88	102 84	820	633	52	88	946	-	8
Hardwick, .	2,21	1,099	ដ	1		498	297	జ	88	385	2	14
Harvard, .	1,84	932	2	1		308	286	20	2	<b>5</b> 80	00	13
Holden,	2,06	852	18	•		418	808	14	84	362	87	18
Hubbardston,	1,65	741	18	,		876	257	œ	87	281	8	17
Lanconter, .	1,84	1,004	12			816	288	90	40	320	_	12
Leioniur,	2,76	1,610	=	ı	480 00	476	361	*	<b>&amp;</b>	460	81	14
Lamenhard	1.12	2,000	z s	1 20 0		621	2	2	<b>£</b>	907	<b>∞</b>	38
	-		• •		_	254	107	9	48	808	31	10

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941	908	020	183	9 6	200	805	786	154	<b>248</b>	120	238	159	237	243	240	282	464	1,161	808 8	298	314	534	492	854	648	490	888	681	220	871	288	620	7,519	
75	3 =	2.2	2	9 4	40	. 40	12	30	108	19	40	88	48	20	20	46	8	131	8	75	46	8	223	61	8	48	<b>o</b>	21	28	25	85	72	285	
8	1	4	• 6	3	1 •	0	8	03	14	<b></b>	9	တ	7	<b>3</b>	4	63	7	တ္တ	CV	23	10	23	87	<b>a</b>	23	20	8	1	9	4	9	=	1	1
28	1708	5777	8		AAT	544	458	148	395	119	192	144	204	214	180	246	814	649	289	291	268	879	449	888	437	848	484	471	421	263	293	368	5,732	3
986	0 0 0 0	1 1 1 1 1 1 1	157	3 6	# 00 i	778	742	190	533	165	290	184	808	808	270	288	534	1,236	006	883	855	205	143	881	246	250	783	269	519	885	385	584	9,420	
984 OO			_					_		_	161 00		10 00	ı		100 00	-		213 40	_	_		685 99		_	_	_		450 15	300 00		411 99	2,774 83	1 00 100
	_	1 500 00			0,102 00		•	ı	ı		ı		ı	1	1	1	,		3,071 37			,	ı		400 00		18,500 00		9,219 88	1,246 60		4,827 22	138,997 09	1
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602,709	8 275 981	1 809 458	653 710	1 001 070	1,004,400 1000	888,885	1,104,648	818,003	1,187,476	297,237	621,779	820,834	778,666	711,872	523,646	1,026,968	957,409	1,696,264	1,363,465	1,086,710	864,875	1,141,588	979,116	780,087	1,624,174	801,088	1,060,039	860,922	679,389	1,887,740	721,267	1,160,952	19,701,244	000
0111	500	4,897	640	1 1 1 1	1000	8,774	8,348	980	2,669	646	1,835	693	1,279	1,354	1,024	1,610	2,135	5,208	8,952	1,670	2,101	2,699	208,7	1,989	8,058	2,025	4,763	8,601	2,862	1,842	1,770	8,398	41,107	
Wilcan	Talling Co.	Millbury	New Braintree	Northboronich	Morraborouga,	Northbridge,	No Brookfield, .	Oak ham,	Oxford,	Paxton,	Petersham, .	Phillipston,	Princeton, .	Royalston,	Rutland,	Shrewsbury, .	Southborough, .	Southbridge, .	Spencer, .	Sterling,	Sturbridge,	Sutton,	Templeton, .	Chron,	Uxbridge,	warren,	Webster,	Westborough,	West Boylston, .	West Brookfield, .	Westminster,	Winchendon, .	Worcester,	

# WORCESTER COUNTY-Continued.

Trecome of Funds, ap- proprieted to Fublic Schools at the option of the Town, includ- ing Tax on dogs.		1	١	ı	ı	<b>\$243 00</b>		•	ı	1	1		,	ı	1	ı	1	95 68	•		1	•	•	•	175 00
Income from Local	,	1 1	•	ı	<b>\$</b> 120 00	1	00 00 00 00	,	ı	146 00	ı	1	56 48	<b>4</b> 20 00	1	<b>8</b>	67 87	12 8	1	202	72 00	90	1.500 00	704 09	1
Am't of School Funds, the income of which can be appropriated only for the apport of Academies and Schools.			,	•	\$2,000 00	•	12,000 00	1	,	2,000 00	1	,	941 29	6,000 00	1	1,000 00	1,000 00	200 00	,	8,366 67	1,200 00	1.000 00	20,300 00	11.433 83	•
Salary of Superintend- ent of Public Sch'le.		\$450 00	1	1	•	1	1	ı	ı	ı	ı	1	75 00	ı	1	ı	ı	ı	1	200 00	1	•	1	•	_ _
Expenses of Superin- tendence by School C'mittees and print- ing School Meports.		498 00			_		_	_	_	_	-		_	-	-	_	_	_	_	_	_		_	_	_
Amount of board, fuel, &co., voluntarily con- tributed for Public Bonols.		1 1	•	•	1	,	\$10 00	•	ı	•	ı	ı	ı	•	ı	1	ı	1	t		2 00		95 00	· ·	'
Relead by Taxes for Schools, including wakes of Teachers, board, fuel, care of free and achool-rooms, for the school-rooms, for the		4.568 00	_	_	_	6,500 00	_	_	_	_		_	_	4,200 00	_	_	_	_	_	_	_	_	_	_	_
Wages of per month, the Value		30 P																							
Average Teachers principality of Board.	•aa a7	58 44	;	20 00	44 00	76 53	8							86 00											
Average Length as returned by Com- mittee.	, a	7.50	6.5	6.17	6.15	8.10	7.10	6 16	7.11	7.10	86	62	6.14	8.7	20	8	8.10	6.16	8	6	61 9		5.0	3.2	6.19
Aggregate Length of Tables Schools for the year, in Months and Days.	20 17	191 10	36.8	102.15	83.15	147	59.15	34	95.11	97.10	142.10	86 10	86 14	100	208.10	84	153	81.15	80.5	76 10	74.6	2	25.5	1818	63 14
1904年.	A-11.	Athol	Auburn.	Rarre.	Berlin.	Blackstone.	Bolton,	Boylston,	Brookfield.	Charlton	Clinton	Dana,	Donglas	Dudley	Fitchburg.	Gardner	Grafton	Hardwin	Harvard	Holden	Hobbardson	Lancastor	Liebrender	Leomingter	Lumenburg

	1	ı	1	1	,	<b>8</b> 196 00	1	•	1	ı	ł	1	71 00	ł	•	1	i	1	ı	1	1	١	ı	ı	80 830 830	•	!	ı	1	•	ı	•	i	\$1,000 63
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		1		1	,	1		ı	1	1	\$864 00	1	i	11,500 00		ı	,	1	1	1	•	2,040 00	ı	ı	ı	1		,		1	ı	'	1	\$775 00 \$76,845 29
	300	1	ı	,	ı		ı	ı	ı	ı	ı	1	ı	1	1	1	1	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	ı	1	1		1	1	\$775 00
																										201 00								<b>\$244</b> 00 <b>\$15,614</b> 80
_	ı	1	!	ı	1	,	1	1	ı	ı	ı	ı	1	1	1	1	ı	•	1	1	1	ı	ı	ı	,	<b>\$</b> 72 00	1	1	8	•	ľ	-	•	\$244 00
81.650.00			00000								1,800 00								2,000 00	2,000 00	2,200 00	8,500 00	8,800 00	2,772 70	2,000 00	4,500 00	4,800 00	5,835 00	8,000 00	2,500 00	2,800 00	2,000 00	96,606 29	<b>\$</b> 323,019 34
829 97	000	97. A0	82	34 00	82 75	36 94	43 90	28 00																		84 12								\$32 42
. 275 00 I				20 00			- 1	.87 34	80 00	,	26 00	46 00	58 67													80 00			ı	55 83	48 00	100 03		\$71 08
89	α α	2	XO XO	•	8.2	8.12	7.13	9	7.15	8	စ	4.10	8	9	စ	7.5	8.18	7.17	11	9	5.18	6.12	6.4	64	7.14	8.8	8.15	7 12	-	<b>4</b> .6	8	<b>8</b> .9	10.5	•
61.15	240.10		144.5	88	56 15	120 15	99.4	42	109	88	99	84	22	98	48	65.5	89 11	1492	124 5	22	88 10	986	88	68.5	180 19	127	95.4	114.3	78	65.12	89	103	1,118	7.8
Mendon,	Inflicial .	W:III	Tannoary,	New Braintree.	Northborough.	Northbridge.	No. Brookfield.	Oakham.	Oxford.	Paxton.	Petersham, .	Phillipston, .	Princeton,	Royalston	Rutland,	Shrewsbury,	Southborough, .	Southbridge,	Spencer,	Sterling,	Sturbridge,	Sutton,	Templeton, .	Upton,	Uxbridge,	Warren,	Webster,	Westborough, .	West Boylston, .	West-Brookfield, .	Westminster, .	Winchendon, .	Worcester, .	Total,

## WORCESTER COUNTY-CONCLUBED.

		нісп	нісн ѕенфогя.	LS,	IN	CORF.	INCORP. ACADEMIES.	UNIN	COR. A	UNINCOR, ACADEMIES AND PEIVATE SCHOOLS.		'pəq
TOWNS.			LENGTH.						1000		dary	pringe
	Иштрет.	How supported.	Months.	Salary of Prin- cipal.	Number.	Ауегике об 5cho	Aggregate paid for Tuition.	Number,	Averige of Schol	Augregate paid for Tuitlon.	Town's shi Fund, pe	How appre
Ashburnham,	-	Taxation,	9.5	8675 00	-1	1	,	-	40	980 00	1	Schools.
Athol,	-	Taxation,	9.15	1,000 00	1	1	i	7	1	150 00	\$271 90	*
Auburn, .	1	-	1	1	1	1	i	1	1	1	157 30	97
Barre, .	-	Taxation,	6	00 006	1	1	-1	1	1	1	224 67	**
Berlin,	1	1	1	1	1	1	1	1	1	,	160 65	33
Blackstone, .	I	Taxation,	8	1,200 00	1	1	,	,	1		415 04	
Bolton,	7	Not by Tax.,	10	800 00	t	1	i	1	1	1	157 58	
Boylston,	1	1	1	,	1	1	į	•	1	1	145 28	377
Brookfield, .	7	Taxation,	9.0	1,000 00	1	1	1	1	1	1	203 46	**
Charlton, .	1	1			1	1	1	1	1	•	203 14	17
Clinton, .	1	Taxation,	9.13	1,500 00	1	1	1	-	50	400 00	383 44	Town Treas
Dana,	1		1	1	í	1	ř	Н	17	21 25	140 25	Schools.
louglas, .	7	Taxation,	010	950 00	1	1	1	1	1	1	219 92	
Dudley,	1				7	30	i	1	1	1	266 32	77
itchburg, .	-	Taxation,	10	2,000 00	ı	1	ì	1	1		687 02	a
Gardner, .	7	Taxation,	10	1,130 00	1	1	1	OI	85	75 00	268 57	99
Grafton,	-	Taxation,	10	1,200 00	1	1	1	*	120	275 00	870 59	99
Hardwick,		1	1	1	-	1	1	-	84	21 00	207 90	99
Jarvard,	1	,	X.	,	1	1	1	4	75	300 00	183 86	71
Holden,	)		,	Y	Y	1	1	-	82	160 00	197 84	*
Inbhardston, .		,	1	,	,	1		-	30	70 00	176 02	-10
JAMUSATHE, .	1		1	*	1	99	81,500 00	1	1		176 86	3
minister, ,	-	Tannitum,	10.5	1,000 00	1	42	1,560 00	1	1	,	232 21	
Lancon Marketine	-	12 part Tres.	10	1,600 1113	-	1	-	1			010	

			٩																																
	Schools.	3	3	3	3	3	3	3	ä	:	3	3	3	3	•	3	3	3	3	3	33	=	3	3	3	3	3	3	3	3	3	3	3	3	
								140 53		08 057	181 59	167 08	142 76	162 89	167 92	153 67	184 41	225 78	457 80	304 06	181 08	188 04			201 75										\$15,356 41
700	00 402	3	ı	;	1	1	•	140 00		1	1	1,800 00	•	1		140 00	ı	548 00	75 00	1	1	82 00	90 90	1	8	1	1	•	,	1		ı	1	24,500 00	\$29,704 25
7.	1 6	77	ı	1	,	ı	1	32		ı	1	42	1	1	ı	82	•	8	2	,	ı	88	77	ı	1	ı	•	•	•	•	1	1	1	810	1,071
37	•	7	I	ı	ı	t	,	1		1	ı	<b>C</b> 7	ı	1	ī	_	ľ	<b>C</b> 1	-	1	1	7	_	ı	-	1	1	1	ı	1	7	ı	1	80	40
1			1	,	ı	1	1	,		ı	1	,	1	,	1	•	•	\$12,500 00		ı	,	•	ı	1	ı	1	1	•	ı		,	,	1	2,000 00	\$17,560 00
ī	_	1	ı	•	ı	1	1	ı		ı	1		1	ı	1	ı	1	48	ı	1	•	1	•	1	1	1	1	•	•	1	ı	ı	1	40	210
1		•	ı	1	1	1	ı	1		ı	ı	1	1	1	ı	1	ı	-	1	•	ı	1	ı	1	•	ı	ı	ı	ı	1	1	ı	ı	Н	5
09 71 Te	1,500,00	0001	1,100 00	1	950 00	1.000 00	1,000 00	. 1	200 00 5	875 00 \$	1	ı	140 00	240 00	,	1	578.14	1,020 00	1,250 00	1,000 00	ı	1	ı	1,000 00	675 00	1,000 00	1,200 00	1,200 00	1,200 00	1	1	•	1,200 00	2,300 00	
5 10	2	2:	2	,	2	10	10	•	8.15	6.5	1	1	2 10	2.10	ı	ı	7.10	8.10	9.11	10	1	,	ı	6	85	10	10	9.10	20	ı	ı	ı	9.10	10.5	1
Laxation,	Taxation.		Laxation,	ı	Taxation,	Taxation,	Taxation.		7	Yax n,	1	1	Taxation,	In part Tax.,	1	•	Taxation,	Taxation,	Taxation,	Taxation,	1	1	ı	Taxation,	Taxation,	Taxation,	Taxation,	Taxation,	Taxation,	•	1	•		_	
٦.	_	-	<b>-</b>	ı	-		-	1	c	4	ı	ı	-	-	1	1	-	_	_	-	ı	ŀ	ı	-	-		-	-	_	ı	1	ı	_	-	88
· · · · · · · · · · · · · · · · · · ·	minord,	M:11	mulipury,	New Braintree, .	Northborough.	Northbridge, .	No Brookfield.	Oakham.	. 6.6	Oxiora, .	Paxton,	Petersham,	Phillipston, .	Princeton,	Royalston,	Rutland,	Shrewsbury.	Southborough, .	Southbridge, .	Spencer,	Sterling,	Sturbridge,	Sutton,	Templeton, .	Upton,	Uxbridge,	Warren,	Webster,	Westborough, .	West Boylston,	West Brookfield, .	Westminster, .	Winchendon, .	Worcester, .	Total,

RECAPITULATION.

COUNTIES.		Population—U. S. Census, 1879.	Valuation-1966.	До. оf Зейоом.	Amount expended in 1870 for Erecting Bedrool-Houses.	-off to bing thromA .078f al ,.o.6, ,nathing	No. of different Schol- ars in Fublic Schools during the Schoel- Jear.	nt eondance attendance in a look of the Tablic Schila -leodos eds School- year.	Fersons under 5 years of age who estend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State be- tween 5 and 15 years of age, May 1, 1870.
Barnstable, .	•	82,774	\$14,276,198	177	\$14,238 88	\$6,545 63	7,345	5,566	89	1,411	6,669
Berkshire, .	•	64,826	27,987,444	331	38,331 41	10,857 45	12,692	8,588	847	1,088	13,085
Bristol, .	•	102,886	59,564,668	334	77,515 79	24,863 54	20,315	13,761	154	1,441	19,979
Dukes, .	•	8,787	2,188,975	21	200 00	862 65	. 882	617	10	115	762
Essex, .	•	200,843	90,893,467	878	159,463 80	89,109 70	85,174	25,694	150	2,874	38,639
Franklin, .	•	82,685	18,048,120	282	1,678 80	6,279 94	6,500	4,621	180	851	8,068
Hampden, .	•	78,409	88,258,177	385	57,578 40	10,586 18	18,719	9,466	252	1,107	18,787
Hampshire, .	•	44,888	20,510,994	267	64,334 85	8,567 60	9,557	6,483	174	1,096	8,865
Middlesex, .	•	274,858	155,814,728	842	378,947 24	71,868 66	56,828	89,593	403	4,184	52,211
Nantucket, .	•	4,128	2,152,568	10	1	ı	169	203	1	8	655
Norfolk, .	•	89,448	95,079,794	368	95,808 65	21,756 70	18,038	13,874	168	1,198	18,045
Plymouth, .	•	65,865	27,982,058	808	47,952 92	12,008 12	12,758	9,615	299	1,061	12,846
Suffolk, .	-	270,802	878,276,700	481	535,418 00	108,897 48	89,254	86,107	2	2,877	49,722
Worcester, .	•	192,718	80,857,766	846	246,117 17	24,580 79	89,981	27,672	. 512	8,655	87,116
Total, .	<del></del>	1,457,862	\$1,009,709,652	8,076	81,712,078 91	\$346,779 89	278,661	<u></u>	1 12	21,978	278,249
	-	!	-		1.	 	  !		!!		

RECAPITULATION-CONTINUED.

COUNTIES.	Number of persons e Teachers Schools.	of different employed as	Schools for Schools for alcondage ar, in Months	Average Wages of Teachers per month, including the Value of Board.	of Teachers including the rd.	of Teachers, ! fach care of   fach care of   fach care of   fach care selection   fact care selection   fact c	of board, fuel, fuel, and for Public a	e of Superin- ees and prins- nool Reperts.	f Superintend- Public Sch'ls,
	Majes.	Females.	Pablic	Malos.	Females.	School Wages board, fres	dec., vo	nebnet tilm'D	
Barnstable,	25	177	7.8	\$62 57	\$27 46	\$53,950 00	\$305 00	\$2,081 99	\$450 00
Berkshire,	43	440	7.10	45 35	26 99	95,118 24	2,879 06	8,297 75	150 00
Bristol,	8	468	8.18	72 26	82 56	183,831 07	277 00	5,174 80	6,197 50
Dukes,	11	20	69	90 09	21 97	4,875 00	ı	864 55	1
Essex,	117	798	8.5	92 75	34 07	868,347 53	865 80	15,128 15	7,530 00
Franklin,	44	842	6.9	44 46	26 13	45,730 00	1,872 19	2,528 26	ı
Hampden,	45	456	8.6	62 42	29 02	155,184 28	1,281 21	8,204 43	8,500 00
Hampshire,	47	378	7.16	52 55	28 82	80,205 00	2,597 00	2,651 40	3,500 00
Middlesex,	159	1,285	8.19	106 88	86 46	687,318 69	869 00	16,071 47	10,935 00
Nantucket,	4	21	10.6	74 42	28 12	8,000 00	١	100 00	ı
Norfolk,	86	480	92	95 65	86 98	216,877 54	710 00	8,159 80	150 00
Plymouth,	20	400	30.55	67 15	29 66	102,678 64	1,140 00	4,084 86	1,589 00
Suffolk,	101	872	10.14	172 61	47 65	952,705 00	ı	4,599 70	4,250 00
Worcester, .	165	1,110	8.7	71 03	82 42	828,019 84	244 00	15,614 80	775 00
Total,	1,049	7,186	8 09	\$76 44	\$31 67	<b>\$</b> 8,272,885 88	\$12,540 26	\$83,060 96	\$89,026 50

8

RECAPITULATION-CONCLUDED.

	of which betaired support	Local	Public e option includ-	poor	INC	ORP. 4	INCORP. ACADEMIES.	UNIN	COR. AC	UNINCOR ACADEMIES AND PRIVATE SCHOOLS.	
COUNTIES.	of School facome of be apprive for the Academi	ne from	of To so of betaire of ta sloo drwoT so on an	HI <sup>R</sup> P 80	.190	ge No.	Aggregate paid	.10	ge No.	Aggregate paid	nt of th
	the: can only	псош	Drop Sepe	No. of	Numb		for Tuition.	Mumb		for Tuition.	
Barnstable, .	\$30,900 00	\$2,292 80	\$25 22	7	67	. 10	00 09\$	8	180	\$2,275 00	\$2,466 68
Berkshire,	22,031 65	1,861 28	458 84	91	63	92	2,800 00	24	206	12,300 00	6,622 48
Bristol,	28,200 00	1,822 00	60 69	6	80	230	14,660 00	21	478	7,550 00	7,257 85
Dukes,	ı	1	ı	-	_	8	800 00	7	136	594 00	805 00
Еввек,	215,427 00	13,084 41	1,349 40	20	8	202	20,729 78	73	3,748	32,615 60	14,073 20
Franklin,	44,139 00	8,367 29	254 30	တ	9	220	5,595 86	19	822	3,456 00	4,335 42
Hampden,	132,687 26	7,075 17	1,095 69	10	C1	888	14,488 71	88	1,182	12,795 00	5,828 69
Hampshire,	135,809 54	10,010 08	641 96	G	ေ	448	9,981 50	19	150	8,299 00	4,697 09
Middlesex,	156,714 91	10,508 40	876 08	88	<b>∞</b>	411	20,207 00	61	1,865	47,622 00	18,877 46
Nantucket,	40,000 00	2,000 00	ı	-	-	8	850 00	67	8	200 00	261 56
Norfolk,	106,080 12	7,185 49	894 97	21	61	122	5,329 30	83	441	25,410 00	7,109 08
Plymouth,	172,788 50	11,655 19	74 50	14	20	178	8,074 00	18	441	5,081 00	5,655 42
Buffolk,	7,100 00	499 82	1	0	•	1	•	8	2,154	228,231 00	18,860 88
Worcester, .	76,845 29	6,002 10	1,000 68	200	10	210	17,560 00	<b>\$</b>	1,071	29,704 25	15,856 41
Total, .	61,167,173 27	\$75,808 48	\$6,240 68	179	48	2,945	\$115,186 15	428	12,448	\$408,432 86	\$107,806 62
1	_	-			_	•				, ,	

### EYENING SCHOOLS.

	ole.	Ат	PENDANC	R.		chers.	
CITIES AND TOWNS.	No. of Schools.	Males.	Femalos.	Average Number.	Time Kept.	No. of Teachers.	Expense.
Boston,	_	690	831	1,021	6 months.	71	\$20,000 00
Brighton,	_	24	5	20	2 months.	2	125 0
Brookline,	_	70	27	48	16 weeks.	4	831 0
Cambridge,	_	167	110	135	4 months.	14	1,500 0
Canton,	8	75	114	121	16 weeks.	3	299 0
Charlestown, .	_	184	99	113	8 months.	9	1,342 2
Chester,	_	20	3	16	6 weeks.	1	· -
Concord,	_	6	10	12	3 mos. 1 w'k.	3	125 0
Dedham,	2	164	91	122	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	85	<b>487</b> 0
Fall River	8	226	83	170	74 evenings.	10	794 5
Fitchburg, .	_	41*	_	25	54 "	8	_
Lawrence, .	_	250	285	139	4 months.	12	800 0
Lowell	2	708	296	834	56 evenings.	33	2,203 7
Lynn.	4	220	110	198	83 "	31	1,450 0
Medford.	_	41	6	19	12 weeks.	2	421 3
New Bedford.	_	45	25	40	6 months.	8	800 0
Newburyport, .	_	40	_	_	_	4	_
Newton,	_	80	20	40	10 weeks.	8	100 0
Northampton, .	8	141	51	144	6 months.	7	900 0
N. Bridgewater,	_	83	57	90	8 "	8	225 0
Quincy	_	211	18	130	12 weeks	8	600 2
Salem	-	143	48	62	82 even'gs.	5	811 5
Salisbury,	_	40	_	_	3 months.	2	100 0
Springfield, .	2	110	75	77	80 evenings.	9	410 0
Taunton	_	105	47	99	2 weeks.	12	450 0
Ware,	_	56	21	45	2 mos. 8 dys.	2	181 8
Watertown,	_	40	80	60	3 months.	8	
Westborough, .	_	28	28	_	10 weeks.	i	100 0
Westfield,	_	35	17	26	28 evenings.	4	100 0
West Roxbury,	_	71	48	85	5 months.	5	700 0
Woburn,	_	83	16	15	91 evenings	2	240 5
Worcester.	8	275	278	128	5 months.	8	1,212 9

<sup>\*</sup> Both males and females.

RETURNS OF SCHOOLS IN STATE INSTITUTIONS, FOR THE YEAR ENDING SEPTEMBER 30, 1870.	N	TATE	INSTL	rutio	ns, fo	R THE	YEAR	ENDI	G SEF	TEMBER	30, 1870.	
		11	ell ages	ettendance , , , , , , , , , , , , , , , , , , ,		i i	ge remain- netitution,	No. of Teachers during the year.	No. of Teachers during the year.	Wages of Teachers per Month.	eachers per	
STATE INSTITUTIONS.		Namber of the Institu	Number of scholans daring the	e egarevA edt galrub	No. under 5 gaibnetta	No. 0ver lb y	No. betwee years of a fugin the l Septembe	Males.	Males. Females.	Males.	Females.	Length of es
Monson State Almshouse,	•	80	299	808	38	<b>∞</b>	292	-	15	<b>6</b> 50 00	\$21 00	12
Tewksbury State Almshouse,*	•	ı	ı	ı	ı	1	ı	ŀ	ŀ	ı	,	ı
Lancaster State Industrial School, .	•	ю	195	140	,	8	8	ı	۰	ı	20 84	12
Westborough Reform School,	•	æ	472	298	ı	24	211	81	80	\$700 00 <del>1</del> \$500 00	±300 00 } 250 00 }	12
Nautical School Ship G. M. Barnard,	•	-	297	151	1	261	8	-	,	100 00	ı	13
* School discontinued.	Per annum	opna.		De t	our teach	ers recelv	ed \$300 per	tanaas	1 do \$25	0; and one \$9	f Four teachers received \$300 per annum; 1 do \$250; and one \$96 for six months	

### GRADUATED TABLES-FIRST SERIES.

The following Table shows the sums appropriated by the several cities and towns in the State, for the education of each child between 5 and 15 years of age. The income of the Surplus Revenue and of other funds held in a similar way, when appropriated to schools is added to the sum raised by taxes, and these sums constitute the amount reckoned as appropriations. The income of such School Funds as were given and are held on the express condition that their income shall be appropriated to schools, is not included. Such an appropriation of their income being necessary to retaining the funds, is no evidence of the liberality of those holding the trust. But if a town appropriates the income of any Fund to its Public Schools, which may be so appropriated or not, at the option of the voters, or when the town has a legal right to use such income in defraying its ordinary expenses, then such an appropriation is as really a contribution to Common Schools as an equal sum raised by taxes. On this account the Surplus Revenue, and sometimes other funds, are to be distinguished from Local School Funds as generally held. The income of the one may be appropriated to schools or not, at the pleasure of the town; the income of the other must be appropriated to schools by the condition of the donation. Funds of the latter kind are usually donations made to furnish means of education in addition to those provided by a reasonable taxation. Committees are expected, in their annual returns, to make this distinction in relation to School Funds.

Voluntary contributions are not included in the amount which is divided, in order to ascertain the sum appropriated to each child. In many towns such contributions, however liberal, are not permanent, and cannot be relied upon as a stated provision. They are often raised and applied to favor particular districts or schools, or classes of scholars, and not to benefit equally all that attend the Public Schools. Besides, the value of board and fuel gratuitously furnished is determined by the mere estimate of individuals, and is therefore uncertain; while the amount raised by taxes, being in money, has a fixed and definite value, and is a matter of record. Still, the contributions voluntarily made are exhibited in a separate column of the Table, as necessary to a complete statement of the provision made by the towns for the education of their children.

The Table exhibits the rank of each city or town in the State, in respect to its liberality in the appropriation of money to its schools, as compared with other cities and towns for the year 1870-71, also its rank in a similar scale for 1869-70. It presents the sum appropriated to each child between 5 and 15.

### GRADUATED TABLES - FIRST SERIES.

### [FOR THE STATE.]

Table showing the comparative amount of Money appropriated by the different Towns in the State, for the education of each Child in the Town, between the ages of 5 and 15 years.\*

For 1868-70.	For 1870-71.	TOWNS.	Sum appropriated by towns for each	and 15 years of	Amount raised by taxes for the sup- port of Schools.		Income of Surplus Revenue appropri- ated to Schools.	TOTAL.	No. of Children be- tween 5 and 15 years of ago.	Amount contributed for board and fuel.
3	1	BROOKLINE, .	<b>\$</b> 25	82 9	<b>\$</b> 28 <b>,49</b> 0	04	_	_	1,103	_
6	2	Newton,	22	63 2	54,000		_		2,386	_
9	3	Belmont,	22	52.7	6,150	00	_	_	273	-
4	4	Milton	21	459	10,000	00	_	_	466	-
15	5	Lexington	21	21.2	7,000	00	-	-	330	-
5	6	Brighton, .	20	30.7	17,200	00	-	_	847	-
8	7	Boston,	19	56.8		00	_	_	46301	-
2	8	West Roxbury,	18	40.5	80,000	00	-	_	1,630	-
21	9	Somerville, .	18	07.4		00	-	_	2,570	-
10	10	Nahant,	17	89 5	1,700	00	-	_	95	-
12	11	Waltham, .	17	77.1	25,234	77	-	_	1,420	-
11	12	Medford,	17	67.2	19,740	00	-	_	1,117	-
7	13		16	97.4	11,457	59	-	_	675	-
17	14	Framingham	16	66 6	12,400	00	-	-	744	-
20	15	Springfield, .	16	00	67,714		-	-	4,232	-
19		Weston,	15	98 5	3,133	00	-	_	196	-
14	17	Watertown, .	15	98.2	14,000	00	-	_	876	-
13	18		15	94.2	5,500	00	-	_	345	-
16	19	Hyde Park, .	15	78.9		00	-	_	950	-
29		Winchester, .	15	20.3		00	-	_	592	-
22 43	21	Charlestown, .	14	81 3		53	-	-	6,081	-
43	22	Westfield, .		58 9	16,500	00	-	-	1,131	-
30	23	Needham, .		51.4	10,000	00	-	-	689	-
-	24	Everett,		85 2	6,200	00	-	-	432	-
27		New Bedford, .		28 1	58,988	31	-	-	3,777	-
28	26	Revere,		12.6		00	-	-	191	-
200	27	W Springfield,		92.1	6,000	00	-	-	431	-
111	28	Andover, .	13		9,576	42	-	-	688	-
85	29		13	72 1	110,951	98	-	-	8,086	-
24	30	Lowell,	13	65	87,865	17	-	-	6,437	-
			l 		<u> </u>			<u> </u>	<u> </u>	===

<sup>\*</sup> Compare the rank of towns in this Table with their rank in the next or Second Series of Tables, showing the percentage of taxable property appropriated for Schools.

For 1869-70.	For 1879-71.	TOWNS.	appropria	and 15 years of age.	Amount raised by taxes for the sup- port of Schools.		Income of Surplus Revenue appropri- ated to Schools.	TOTAL.	No. of Children be- tween 5 and 15 years of age.	Amount contributed for board and fuel.
87	81			54.8	\$19,217	50	-	_	1,419	_
25		Malden,		40.8	19,000	00	-	-	1,417	-
46		Peabody,		19.4	19,000	00	-	-	1,440	-
116 31		Lancaster, .		12 2 84 8	4,200 96,606	00 29	_	-	320	-
58		Worcester, . Reading,		79.7	7,000		_	_	7,519 547	<b>\$</b> 300 00
18	37			77.8	8,200	00	_	_	642	<b>4000</b> 00
51	1	Plymouth, .	12	69.7	14,500		_	_	1,142	_
41		Concord,		58.9	5,300	00	_	-	421	-
74	40	Northampton, .		39.3	24,080	00	-	-	1,943	-
52		Granby, .		26.1	1,925	00		_	157	-
40	42	Haverhill, .		24 4			<b>\$</b> 521 18	<b>26,521 18</b>		-
39	43	Nantucket,		21.4 10 3	8,000		-	-	655	900 00
48 33	45	Amherst, New Braintree,		81.2	8,000 1,571		_	_	661 133	800 00
38		Wellfleet,		79.2	5,000	00	_	_	424	_
59		Longmeadow, .		73.8	3,000		184 22	3,134 22	267	_
44		North Andover,		62.8	6,000	00	-	_	516	_
36	49	Bridgewater, .	11	53.8	7,800	00	_	_	676	_
84	50	Lincoln,		486	1,700	00	-	-	148	_
50	51	Quincy,		43 9	17,570	00	-	-	1,536	<b>–</b> .
102	52	Walpole,		39.2	4,500	00	-	-	895	-
118		Bradford, .		33.5	4,500	00		0.050.00	897	_
45	24	Lunenburg, .		29.8	2,175		175 00		208	-
117 119	56	Northborough, . Winthrop, .	11	29.8	3,000 1,400	1	196 00	3,196 00	283 124	_
42		Greenfield,	ii		7,300	00	_		658	_
107	58			11.1	5,000		-	_	450	_
47		Stoneham.		07.6	8,750		_	-	790	_
122		Boxborough, .	10		750	70	_	-	69	_
60	61	Leominster, .	10	87.8	6,600	00	_	-	607	_
86	62	Lenox,	10		3,000				276	
145		Methuen,		80.8	5,500		196 00	5,696 00	527	20 00
49	64	Yarmouth, .		78.2	4,000	00	40.00	<b>740.00</b>	871	-
77	60	Montgomery, .		75 4	700	00	42 00	<b>742</b> 00	69 103	80 00
61 32	67	Burlington, . Fairhaven, .		67.9 67.9	1,100 5,500	00	_	_	515	<b>-</b>
81		Kingston, .		69.8	8,000	8	74 50	3,074 50	289	_
56	69			584	1,450	00		-	187	_
147	70			50 9	20,000	00	_		1,903	800 00
84	71		10	47.4	19,314	95	-	_	1,844	-
63	72			433	17,703	54	699 71	18,403 25		
54	73	Leicester, .		27.2	4,725		-	-	460	<b>95 00</b>
152	74			18.3	3,900	00	-	-	883	-
57	75			17.6	7,500	00	96.00	094 00	787	-
80 70	. 76	Prescott,		17.4	900 <b>4,</b> 000	00	86 00	986 00	92 894	_
113	77 78	Ashland,		15 2 12.9	1,200	00	56 00	1,256 00	124	_
101	79	Wendell,		12.7	800	00		_,	79	15 00
			-							

		risted reach sen 5	by sep-	활성		술의	mount contributed for board and fuel.
•			8 9 8	ncoma of Burplus Reveuse appropriated to Schools.	1	and and	15 25
خ آنه	<b>50777</b>	45.00	t rateed for the s	8 648		Ē.	5 4
1870-71	TOWNS.	15 0 0	\$ 500 000	6 3 3	TOTAL	5 5	23
		2372	Amount taxes fo port of	O A GE		000	§3
To.		Sum approp by towns for child betweend 15 yes	<b>₽</b> 3₽	당독급		No. of Child tween 5 years of au	₹₫
	1					<del>i</del>	
55 8		<b>\$</b> 10 03 8	\$1,000 00	\$54 00	<b>\$1,054 00</b>	105	-
127 8		9 97.6	21,000 00	-	-	2,105	-
149 8		9 96.7	8,000 00	-	-	801	-
112 8		9 93 4	1,500 00	-		151	-
76 8		9 91	2,000 00		2,140 63		-
97 8		9 84 4	4,000 00	223 22	4,223 22		-
69 8 85 8	6 Tyngsborough, 7 Newburyport, .	9 81.8 9 78.8	1,050 00 24,000 00	-	_	107	-
	8 Westminster, .	9 72.2	2,800 00	_		2,452 288	_
	9 Greenwich, .	9 70.9	1,000 00	_		103	_
- 1	0 Southborough,	9 69 8	4,500 00	_	_	464	_
156 9		9 67.8	1,200 00	_	_	124	-
	2 South Hadley,.	9 67 3	5,000 00	155 80	5,155 80		<b>225 00</b>
89 9	3 Holyoke	9 63 9	18,700 00	_	_	1,940	-
128 9		9 63.9	1,600 00	-		166	-
220 9		9 61.7	4,500 00	174 00	4,674 00		800 00
140. 9		9 56 9	2,000 00	-	-	209	-
123  9		9 50.7	4,050 00	-	-	426	-
95, 9		9 50.5	46,063 66	-	i –	4,846	-
96: 9		9 50 9 49.4	7,000 00	_	-	737	-
83 10 23 10		9 49.4 9 44.1	1,500 00 12,000 00	-	i -	158	_
	2 Dunstable,	9 41.2	800 00	_		1,271	12 00
	3 Manchester, .	9 89 6	2,800 00	_	_	298	
170 10		9 37 5	3,900 00	_	_	416	
98 10		9 37 1	29,200 00	-	_	8.116	
254 10		9 34 6	2,000 00	_	-	214	
139 10	7 Dalton,	9 33.6	2,250 00	_	_	241	64 00
159 10		9 29.4	20,000 00	-	-	2,152	j -
87 10		9 28 8	49,597 99	-	_	5,340	·
	O Conway, .	9 22.5	2,500 00	-	-	271	•
110 11		9 21.8	54,422 55	-	-	5,904	
142 11 66 11		9 20.5 9 18 4	2,200 00	-	-	239	
165 11		9 18 4 9 17.4	4,500 00 1,000 00		_	109	
195 11		9 16 7	5,500 00	_	-	600	
68,11	1	9 12.3	2,600 00	_		285	
226 11		9 09.1	1,000 00	-	-	110	•
72 11		9 09.1	1,500 00	-	_	165	
67 11	9 Barnstable, .	9 03 9	8,000 00	-	_	885	
138 12	0 Holliston, .	9 02 2	6,000 00	-	-	665	
-12		9 00.9	2,000 00	-	-	222	
92 12		9 00.7	3,900 00	-	-	433	
215 12		8 96 8	14,250 00	-	<b>!</b> -	1,589	-
88 12		8 89 7	2,500 00	-	-	281	
108 12 199 12		8 84.9 8 84 4	8,000 00 6,500 00	-	-	904	
161 12		8 77 2	4,000 00		i -	733	
121 12		8 66.3	10,500 00	_	l -	456 1,212	
		5 00.0		_		1 292 12	1
<u> </u>							<u> </u>

			Jated each en 5	F 6 7	Income of Surplus Revenue and of sim- ilar funds appropri- ated to Schoole.		22	mount contributed for board and fuel.
			ropriat s for each stween years	259	E254			20
			100	ŘŠŘ	E 2 6 8		ldren and age.	Į,
<b>,</b>	2	TOWNS.	max .	rafeed or the Schoo	2 2 2	TOTAL.	300	87
1889-79.	1870-71.	20112101			9253	101111	وع	# B
3	20		355	mount taxes of port of	8552		254	ΒĀ
For	For		Sum by to child and	Amount taxes port of	2825		No of Child tween 5 years of a	ğ٩
			1 00		H		4	
180		Taunton,	<b>\$</b> 8 66 2			30,069 09		<b>-</b>
	130		8 63.6		)	_	579	1,140 00
114	131	Foxborough, .	8 62.6		) 18 <b>8</b> 85	4,683 85	543	-
148	132	Harvard,	8 57.1	2,400 00	) -	-	280	-
221	138	Westborough, .	8 56 8	5,835 00	) -	_ '	681	-
151	134	Canton,	8 55.6	8,000 00	) –	-	935	-
75	135	Hull,	8 58.6	850 0	) <u> </u>	l –	41	_
100	186	Marlborough, .	8 52.4	16,000 0	) _	-	1,877	_
	187		8 48.5			! _	880	_
	188	Frakkam	8 47.5	1,000 0		1 _	118	_
	139	Acushman	8 47.4	2,000 0		l _	286	_
	140	U-lic-	8 47.4	1,000 0		1 I	118	_
						· -		_
	141		8 46 2	6,400 0		1 970 00	780	_
	142		8 45.7	1,800 0		1,370 06	162	-
		Dighton,	8 44.6			-	296	-
	144		8 44 1	1,800 0		-	154	-
	145		8 48.9			-	237	12 00
124	146	Douglas,	8 43 4		0 -	-	415	-
141	147	Hanover, .	8 38.5	2,700 0	0 -	<b>-</b>	322	-
108	148	Ware,	8 38	7,000 0	181 87	7,181 87	857	7 00
287	149		8 86.9	1,916 5		' -	229	-
	150		8 86 4			_	1,076	_
	151		8 33.3			_	204	-
	152		. 8 83 8		. 1	_	1,428	_
	153		8 82 4	8,879 0		l _	466	_
	154		8 29 9	2,000 0	1	1 _	241	125 00
	155		8 29 6			1 -	223	22 00
	156		8 27.2		1		784	22 00
						000 00		_
	157		8 26.3			9,899 00		-
	158		8 25.7	1,800 0		-	218	-
		Lakeville, .	8 28 6		. ?	-	205	-
	160		8 21.2			-	548	-
	161		8 21 2			-	548	-
	162		8 18.9			1 -	602	279 19
	163		8 12	2,062 4		-	254	65 00
283	164		8 10.8	1,200 0	0 -	-	148	_
94	165		8 06.4	8,000 0	0 -	-	872	_
	166	Winchendon, .	8 06.4	5,000 0		1 -	620	_
	167		8 05.6			5,220 00		_
		Hardwick.	8 04.1	3,000 0				_
		Groton,	8 01.1	6,000 0			749	45 00
	170		7 95 8				877	-5-00
	171	Acton,	7 94.1	2,325 0		2,414 25		
			7 92.9			-,x1x 20	5,827	_
		Fall River, .				-		55 00
		Franklin, .	7 88 9			-	507	<b>50 00</b>
	174		7 88.6	4,566 0		-	579	_
	175		7 86.5				178	-
	176		7 84	1,800 0		1,897 27	242	-
184	177	Dracut,	7 83.8	8,000 0	) -	-	883	-
	<b> </b>		l	L	1	1		
				·				

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ļ			propriated is for each etween & years of	d by	Income of Surplus Revenue and of sim- liar funds appropri- ated to Schools.		22	34
ł			appropriated was for each between 5 15 years of	200	or or or	1	Age.	54 26
اما	٠		22 13	rated or the Schoo	a pag		5 5	# 5
For 1889-70.	For 1870-71.	TOWNS.	2 2		900	TOTAL.	7	55
28	181		25 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	mount taxes port of	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		25	E.A
Po l	For		Bum by to child and	₹ 5 × ×	E E E	1	No. of Cl tween years o	Amount contributed for board and fuel
			<del>Ì</del>	<u> </u>		i		
207			<b>\$7</b> 83 2	\$2,772 70	-	-	354	_
176			7 82.2	8,361 39	-	-	1,069	-
223 1			7 81.2	6,000 00	-	-	768	-
183 1 186 1			7 79. <del>0</del> 7 79.2		-	-	295	_
297			7 78.4	1,200 00 1,300 00	_	_	154 167	_
109			7 75 2		_		129	-
175			7 74 6	3,300 00	_	_	426	_
154 1			7 72.4	8,800 00	_	_	492	-
65 1		Pittsfield, .	7 70.8		-	-	2,517	-
		Hamilton, .	7 69 2	1,000 00	-	-	130	-
166		Ipswich,	7 69 2	4,400 00	-	-	572	-
261 1		Hinsdale,	7 66.9	2,500 00			326	\$25 00
105			7 62.6 7 61.2	1,200 00	<b>#</b> 58 10	<b>\$1,258</b> 10	165	200 00
204 1			7 57.5	11,000 00 2,000 00	-	-	1,445 264	200 W
185			7 56.3	1,800 00	_	_	238	
172			7 47.3	1,700 00	71 00	1,771 00	237	_
126		Holden,	7 45.9	2,700 00	-		362	_
158 1		Plainfield, .	7 44.7	700 00	_	- 1	94	-
163 1			7 40 7	8,000 00	_	-	405	_
275		Carlisle,	7 39.1	850 00	-	- 1	115	-
171 2			7 38.9	8,000 00	-	- 1	406	10 00
258 2			7 38.8	2,800 00	-	-	379	i -
134 2	202	Hudson,	7 38.5 7 38	5,000 00	-	-	677	-
271 2			7 36.6	4,000 00 4,000 00	_	_	542 543	} <u> </u>
299			7 35 3	1,000 00	_		136	_
		Dover,	7 34.6	900 00	77 10	977 10	133	
181 2	207	Billerica,	7 32.4	2,600 00	_	_	355	
251 2	208	Middleton, .	7 29.6	1,700 00	-	ł – '	233	
197 2	209	Randolph, .	7 21.5	10,000 00	-	-	1,386	-
241 2	210	Hanson,	7 21.1	1,500 00	-	-	208	
265 2		Grafton,	7 19.6 7 14.8	6,800 00	-	-	945	105 M
169 2 253 2		Goshen,	7 14.8 7 12.3	500 00 2,500 00	_	-		185 00 240 00
260 2	214	Wilmin mton	7 11.9	2,500 00 1,075 00	_	_	851   151	290 00
150 2	215	Westford, .	7 11.8	2,500 00	119 50	2,619 50		] -
		Egremont, .	7 10.9	1,244 08			175	
212 2	217	Stoughton, .	7 09.2	8,000 00	_	-	1,128	
185 2	218	Middleborough,	7 07.1	7,000 00	_	-	990	-
225 2		Dartmouth, .	7 03.1	4,500 00		-	640	
305 2			7 02.8	4,200 00	-	<b>–</b>	598	-
210 2		Sturbridge, .	7 00.6	2,200 00	-	-	314	
268 2 93 2		Tisbury,	6 98.4 6 92.3	2,200 00 900 00	-	-	315	
282 2		Hawley, Salisbury,	6 89.6	4,950 00	167 12	5,117 12	130 742	
246 2		Amesbury,	6 88.9	6,600 00		JA11 12	958	
167 2			6 87.3	2,000 00	_	-	291	
	1					1	l	ĺ

291   227   Leverett,									
291 227	For 1869-70.	For 1870-71.	towns.	Sum appropriated by towns for each child between 5 and 15 years of age.	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Bevenue and of sim- liar funds appropri- ated to Schools.	TOTAL.	No of Children be- tween 5 and 15 years of age.	Amount contributed for board and fuel.
191   229   Williamstown,	-								
219   229   Williamstown,			Leverett,		<b>\$1,000</b> 00	_	-	146	_
192   230   Bolton,			Mendon,			-	-		-
189   231   Braintree,						-	- 1		<b></b>
224   232   West Newbury,   6 76 8   2,915 13   -						-	-		<b>\$</b> 10 00
244   233   W. Brookfield,   6 73 8   2,500 00			Braintree,			-	-		-
206   234   Essex,			West Newbury,			-	-		-
128   235   Sterling,						-	_		-
174   236			Starling			_	_		_
230 237 Norton, 6 68 9 2,000 00						1	• .		_
245 238   Milford,   6 67.8   16,000 00   -   2,396   208 239   Paxton,   6 66.7   800 00   -   -   120   270 240   Dennis,   6 64.9   5,000 00   -   -   776   288 242   Dana,   6 62.2   1,000 00   -   -   151   211 243   Seekonk, .   6 59.3   1,200 00   -   -   182   187 244   Northfield, .   6 58   2,500 00   -   -   800   318 245   Gosnold, .   6 57.9   125 00   -   -   2,135   286 247   Sutton, .   6 55.4   3,500 00   -   -   2,135   286 247   Sutton, .   6 55.4   3,500 00   -   -   2,135   286 247   Sutton, .   6 55.4   3,500 00   -   -   306   267 249   Pembroke, .   6 52.2   1,800 00   -   -   2,35   260   250   Chelmsford, .   6 50.8   8,000 00   -   -   461   260 251   Chesterfield, .   6 49 4   1,000 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   243 253   Nowbury, .   6 48.1   1,400 00   -   -   302   303   30									_
208   239   Paxton,			Milford			_	_		_
270   240   Dennis,   6   64.9   5,000   00   -   -     752   129   241   Hatfield,   6   64.9   2,500   00   -   -     376   151   242   242   Dana,   6   62.2   1,000   00   -     -     182   187   244   Northfield, .   6   58   2,500   00   -     -     380   318   245   Gosnold, .   6   57.9   125   00   -     -     19   217   246   Abington, .   6   55.7   14,000   00   -     -     2,135   286   247   Sutton, .   6   55.4   3,500   00   -     -     366   267   249   Pembroke, .   6   53.6   2,000   00   -     -     366   267   249   Pembroke, .   6   53.6   2,000   00   -     -     366   267   249   Pembroke, .   6   50.8   3,000   00   -     -     461   260   251   Chesterfield, .   6   49   4   1,000   00   -     -     362   243   252   Northbridge, .   6   48.4   5,200   00   -     -     216   290   254   Blackstone, .   6   47.1   6,500   00   2243   00   86,743   00   1,042   296   255   Palmer, .   6   44.3   5,000   00   -     -     216   290   254   Blackstone, .   6   47.1   6,500   00   2243   00   86,743   00   1,042   296   255   Palmer, .   6   44.3   5,000   00   -     -						_	_		_
288   242   Dana,   6   62.2   1,000   00   -   -   151   182   187   244   Northfield, .   6   59.3   1,200   00   -   -   182   187   244   Northfield, .   6   58   2,500   00   -   -   19   217   246   Abington, .   6   55.7   14,000   00   -   -   2,135   286   247   Sutton, .   6   55.4   3,500   00   -   -   306   267   249   Pembroke, .   6   52.2   1,800   00   -   -   276   263   250   Chelmsford, .   6   50.8   3,000   00   -   -   154   284   252   Northbridge, .   6   48.4   5,200   00   -   -   154   294   252   Nowbury, .   6   48.1   1,400   00   -   -   216   296   255   Palmer, .   6   44.3   5,000   00   -   -   216   296   255   Palmer, .   6   44.3   5,000   00   -   -   226   296   255   Palmer, .   6   44.3   5,000   00   243   00   36,743   00   1,042   296   255   Palmer, .   6   44.3   5,000   00   -   -   625   328   257   Otis, .   6   39.3   1,200   00   65   84   1,265   84   198   242   259   Monroe, .   6   39   2,000   00   -   -   818   242   259   Rochester, .   6   38.3   1,200   00   -   -   188   242   259   Rochester, .   6   37.5   2,524   39   -   -   396   272   262   Southbridge, .   6   37.4   7,400   00   -   -   1,161   222   263   N. Brookfield, .   6   36.1   5,000   00   -   -   376   232   265   Topsfield, .   6   37.4   7,400   00   -   -   316   322   265   Topsfield, .   6   32.9   1,500   00   -   -   377   286   267   Phillipeton, .   6   28.7   2,500   00   -   -   384   288   289   268   Raynham, .   6   28.7   2,500   00   -   -   384   288   289   268   Raynham, .   6   28.7   2,100   00   -   -   384   282   257   Huntington, .   6   25.8   1,200   00   -   -   248   272   262   261   270   262   271   282   272   282   283   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   285   284   271   282   284   271   282   284	270	240		6 64.9	5,000 00	1	1		180 00
211 243				6 64.9	2,500 00	-	_	876	_
187   244   Northfield,						-	-	151	-
318   245   Gosnold,       6 57.9   125 00   -   -   2,135           286   247   Sutton,       6 55.7   14,000 00   -   -   2,135           286   247   Sutton,       6 55.4   3,500 00   -   -   306           267   249   Pembroke,       6 52.2   1,800 00   -   -   276           263   250   Chelmsford,       6 50.8   3,000 00   -   -   461           260   251   Chesterfield,       6 49.4   1,000 00   -   -   802           243   253   Newbury,       6 48.4   5,200 00   -   -   802           243   253   Newbury,       6 48.1   1,400 00   -   -   -   802           290   254   Blackstone,       6 47 1   6,500 00   \$243 00   \$6,743 00         1,042           296   255   Palmer,       6 44.3   5,000 00   -   -   -   625           328   257   Otis,       6 39.3   1,200 00   65 84   1,265 84         198           318   258   Coleraine,       6 39   2,000 00   -   -   -   188           324   259   Monroe,       6 39   2,000 00   -   -   -   188           325   261   Somerset,       6 37.5   2,524 39   -   -   396           322   262   Southbridge,       6 37.4   7,400 00   -   -   316           322   263   Topsfield,       6 32.9   1,500 00   -   -   316           322   265   Topsfield,       6 32.9   1,500 00   -   -   337           327   289   288   Raynham,       6 28   7   2,500 00   -   -   384           324   271   Charlemont,       6 21 8			Seekonk, .			-	-		22 00
217   246   Abington,						-	-		-
286   247   Sutton,	318	245	Gosnold,			-	-		-
264   248   Shirley,						-	-		-
267   249   Pembroke, .   6 52.2   1,800   00   -   -   276   263   250   Chelmsford, .   6 50.8   8,000   00   -   -   461   260   251   Chesterfield, .   6 494   1,000   00   -   -   802   243   252   Northbridge, .   6 48.4   5,200   00   -   -   216   290   254   Blackstone, .   6 47   1 6,500   00   243   00   86,743   00   1,042   296   255   Palmer, .   6 44.3   5,000   00   -   -   625   237   256   Wareham, .   6 40   4,000   60   -   -   625   328   257   Otis, .   6 39.3   1,200   00   65 84   1,265 84   198   318   258   Coleraine, .   6 39   2,000   00   -   -   818   242   259   Monroe, .   6 39   250   00   12   00   262   00   41   232   260   Rochester, .   6 37.5   2,524   39   -   -   188   325   261   Somerset, .   6 37.5   2,524   39   -   -   396   272   262   Southbridge, .   6 37.4   7,400   00   -   -   1,161   222   263   N. Brookfield, .   6 36.1   5,000   00   -   -   316   321   264   Lanesborough, .   6 32.9   2,000   00   -   -   316   321   264   Lanesborough, .   6 32.9   1,500   00   -   -   397   289   288   Raynham, .   6 28.7   2,100   00   -   -   337   289   288   289   Lee, .   6 26.4   5,750   00   -   -   334   288   270   Huntington, .   6 25   1,400   00   -   -   224   271   Charlemont, .   6 21.8   1,200   00   -   -   248   270   273   Rockport, .   6 20.7   4,963   78   107   00   5,070   78   817   240   273   Rockport, .   6 20.7   4,963   78   107   00   5,070   78   817   240   273   Rockport, .   6 20.7   4,963   78   107   00   5,070   78   817   240   273   Rockport, .   6 20.7   4,963   78   107   00   5,070   78   817   240   273   Rockport, .   6 20.7   4,963   78   107   00   5,070   78   817   240   273   Rockport, .   6 20.7   4,963   78   107   00   5,070   78   817   240   273   Rockport, .   6 20.7   4,963   78   107   00   5,070   78   817   240   273   Rockport, .   6 20.7   4,963   78   107   00   5,070   78   817   240   273   275						-	-		-
263   250   Chelmsford,	204	248	Shirley,			-	- 1		-
260   251   Chesterfield, 284   252   Northbridge, 6   48.4   5,200   00   -   -   802   248   253   Newbury, 6   48.1   1,400   00   -   -   216   255   Palmer, 6   44.3   5,000   00   -   -   776   227   256   Wareham, 6   40   4,000   00   -   -   625   328   257   Otis, 6   39.3   1,200   00   65   84   1,265   84   198   318   258   Coleraine, 6   39   2,000   00   -   -   818   252   261   Somerset, 6   37.5   2,524   39   -   -   396   322   263   N. Brookfield, 6   36.1   5,000   00   -   -   316   321   264   Lanesborough, 6   32.9   2,000   00   -   -   316   322   265   Topsfield, 6   63.9   2,000   00   -   -   316   322   265   Topsfield, 6   63.9   2,000   00   -   -   316   322   265   Topsfield, 6   63.9   2,000   00   -   -   316   322   265   Topsfield, 6   63.9   2,000   00   -   -   316   322   265   Topsfield, 6   63.9   1,500   00   -   -   387   387   288   269   Lee, 6   62.4   5,750   00   -   -   384   288   269   Lee, 6   62.4   5,750   00   -   -   384   288   269   Lee, 6   62.4   5,750   00   -   -   224   282   271   Charlemont, 6   28   1,200   00   -   -   247   240   273   Rockport, 6   20.7   4,963   78   107   700   5,070   78   817   240   273   Rockport, 6   20.7   4,963   78   107   700   5,070   78   817   240   273   Rockport, 6   20.7   4,963   78   107   700   5,070   78   817   240   273   Rockport, 6   20.7   4,963   78   107   700   5,070   78   817   240   273   Rockport, 6   20.7   4,963   78   107   700   5,070   78   817   240   273   Rockport, 6   20.7   4,963   78   107   700   5,070   78   817   240   273   Rockport, 6   20.7   4,963   78   107   700   5,070   78   817   240   273   Rockport, 78   20.7   4,963   78   107   700   5,070   78   817   240   273   260   270	207	249	Chalmacond .			-	-		
284   252   Northbridge,   6 48.4   5,200 00   -	200	200	Chesterfold			-	-		519 00
243   253   Newbury,       6 48 1	200	250				-	_		219 00
290   254   Blackstone,   6 47   6,500   243   00   6,743   00   1,042   776   237   256   Wareham,   6 40   4,000   60   -     -	248	253	Newhure.			_	_		40 00
296 255       Palmer,       6 44.8       5,000 00       -       -       776         237 256       Wareham,       6 40       4,000 00       -       -       -       625         328 257       Otis,       .       6 39.3       1,200 00       65 84       1,265 84       198         318 258       Coleraine,       .       6 39       2,000 00       -       -       -       818         242 259       Monroe,       .       6 39       250 00       12 00       262 00       41         232 260       Rochester,       .       6 37.5       2,524 39       -       -       188         325 261       Somerset,       .       6 37.4       7,400 00       -       -       1,161         222 263       N. Brookfield,       .       6 36.1       5,000 00       -       -       36         321 264       Lanesborough,       .       6 32.9       1,500 00       -       -       397         285 267       Phillipston,       .       6 29.7       2,500 00       -       -       397         289 288       Raynham,       .       6 28.7       2,100 00       -       -       334      <	290	254	Blackstone.			<b>8</b> 243 00	26 743 00		20 00
237   256   Wareham,	296	255			5,000 00	-	-	776	_
828   257   Otis,       6 39.3   1,200 00   65 84   1,265 84   198   318   258   259   Monroe,       6 39   2,000 00   -     262 00   41   262 00   41   262 00   262 00   41   262 00   262						_	_		_
318:258       Coleraine,       6 39       2,000 00       -       -       818         242:259       Monroe,       6 39       250 00       12 00       262 00       41         232:260       Rochester,       6 38.3       1,200 00       -       -       188         325:261       Somerset,       6 37.5       2,524 39       -       -       396         272:262       Southbridge,       6 37.4       7,400 00       -       -       1,161         222:263       N. Brookfield,       6 36.1       5,000 00       -       -       316         321:264       Lanesborough,       6 32.9       2,000 00       -       -       237         277:266       Orange,       6 29.7       2,500 00       -       -       397         289:267       Phillipeton,       6 28 9       1,000 00       -       -       334         289:268       Raynham,       6 28 7       2,100 00       -       -       384         289:268       Lee,       6 26.4       5,750 00       -       -       918         216:270       Huntington,       6 25       1,400 00       -       -       918         224:271	328	257			1,200 00	65 84	1,265 84		148 50
242   259   Monroe,       6 39   250 00   12 00   262 00   41           232   260   Rochester,       6 38.3   1,200 00   -   188           325   261   Somerset,       6 37.5   2,524 39   -   -   396           272   262   Southbridge,       6 37.4   7,400 00   -   -   1,161           222   263   N. Brookfield,       6 36.1   5,000 00   -   -   316           321   264   Lanesborough,       6 32 9   2,000 00   -   -   316           322   265   Topsfield,       6 32.9   1,500 00   -   -   397           285   267   Phillipston,       6 29.7   2,500 00   -   -   397           285   267   Phillipston,       6 28 9   1,000 00   -   -   384           288   269   Lee,       6 26.4   5,750 00   -   -   918           216   270   Huntington,       6 25   1,400 00   -   -   224           324   271   Charlemont,       6 21.8   1,200 00   -   -   198           218   272   Scituate,       6 21   2,900 00   -   -   -   198           240   273   Rockport,       6 20.7   4,963 78   107 00   5,070 78   817	318	258	Coleraine, .		2,000 00	_	_	818	150 00
825       261       Somerset,       6       37.5       2,524       39       -       -       396         272       262       Southbridge,       6       37.4       7,400       00       -       -       1,161         222       263       N. Brookfield,       6       86.1       5,000       00       -       -       786         321       264       Lanesborough,       6       32.9       2,000       00       -       -       316         322       265       Topsfield,       6       32.9       1,500       00       -       -       237         177       266       Orange,       6       29.7       2,500       00       -       -       397         289       268       Raynham,       6       28.9       1,000       00       -       -       384         289       270       Raynham,       6       28.7       2,100       00       -       -       918         416       270       Huntington,       6       25       1,400       00       -       -       224         240       273       Rockport,       6       21       2,900 </td <td><b>24</b>2</td> <td>259</td> <td>Monroe,</td> <td>6 39</td> <td>250 00</td> <td>12 00</td> <td>262 00</td> <td>41</td> <td>_</td>	<b>24</b> 2	259	Monroe,	6 39	250 00	12 00	262 00	41	_
272   262   263   N. Brookfield,       6 37.4   7,400   00   -   -   786						-	- !		-
222 263       N. Brookfield,       6       86.1       5,000       00       -       -       786         321 264       Lanesborough,       6       32.9       2,000       00       -       -       316         322 265       Topsfield,       6       32.9       1,500       00       -       -       237         285 267       Orange,       6       29.7       2,500       00       -       -       397         289 268       Raynham,       6       28.9       1,000       00       -       -       384         238 269       Lee,       6       26.4       5,750       00       -       -       918         216 270       Huntington,       6       25       1,400       00       -       -       224         324 271       Charlemont,       6       21.8       1,200       00       -       -       193         218 272       Scituate,       6       21       2,900       00       -       -       467         240 273       Rockport,       6       20.7       4,963       78       107       00       5,070       78       817						-	- 1	896	-
321   264   Lanesborough, .     6 32 9   2,000 00   -   237       322   265   Topsfield, .     6 32.9   1,500 00   -   237       177   266   Orange, .     6 29.7   2,500 00   -   397       286   267   Phillipston, .     6 28 9   1,000 00   -   159       289   268   Raynham, .     6 28 7   2,100 00   -   384       288   269   Lee, .     6 26.4   5,750 00   -   918       216   270   Huntington, .     6 25   1,400 00   -   224       324   271   Charlemont, .     6 21.8   1,200 00   -   193       218   272   Scituate, .     6 21   2,900 00   -   467       240   273   Rockport, .     6 20.7   4,963 78   107 00   5,070 78   817			Southbridge,			-	-		-
322   265   Topsfield,       6 32.9   1,500 00   -   237           177   266   Orange,       6 29.7   2,500 00   -   397           285   267   Phillipeton,       6 28 9   1,000 00   -   159           289   268   Raynham,       6 28 7   2,100 00   -   384           288   269   Lee,       6 26.4   5,750 00   -   918           216   270   Huntington,       6 25   1,400 00   -   -   224           324   271   Charlemont,       6 21.8   1,200 00   -   -   193           218   272   Scituate,       6 21   2,900 00   -   -   467           240   273   Rockport,       6 20.7   4,963 78   107 00   5,070 78	222	263	N. Brookfield, .			-	- 1		-
177   266   Orange,   6   29.7   2,500   00   -   397   285   267   Phillipston, .   6   28 9   1,000   00   -   159   289   268   Raynham, .   6   28 7   2,100   00   -   384   288   269   Lee,   6   26.4   5,750   00   -   918   216   270   Huntington, .   6   25   1,400   00   -   224   271   Charlemont, .   6   21.8   1,200   00   -   193   218   272   Scituate, .   6   21   2,900   00   -   467   240   273   Rockport, .   6   20.7   4,963   78   107   00   5,070   78   817	321	204	Lanesborough,			-	-		-
285 267 Phillipston, . 6 28 9 1,000 00 - 159 289 268 Raynham, . 6 28 7 2,100 00 - 384 288 269 Lee, . 6 26.4 5,750 00 - 918 216 270 Huntington, . 6 25 1,400 00 - 224 271 Charlemont, . 6 21.8 1,200 00 - 198 218 272 Scituate, . 6 21 2,900 00 - 467 240 273 Rockport, . 6 20.7 4,963 78 107 00 5,070 78 817	522 177	200	Topsneid, .			-	-		_
289/268     Raynham,     6 28 7     2,100 00     -     -     384       288/269     Lee,     6 26.4     5,750 00     -     -     918       216/270     Huntington,     6 25     1,400 00     -     -     224       224/271     Charlemont,     6 21.8     1,200 00     -     -     198       218/272     Scituate,     6 21     2,900 00     -     -     467       240/273     Rockport,     6 20.7     4,963 78     107 00/5,070 78     817						•	-		-
288 269 Lee,     .     6 26.4     5,750 00     -     -     918       216 270 Huntington,     .     6 25     1,400 00     -     -     224       824 271 Charlemont,     .     6 21.8     1,200 00     -     -     193       218 272 Scituate,     .     6 21     2,900 00     -     -     467       240 273 Rockport,     .     6 20.7     4,963 78     107 00 5,070 78     817						l	_		_
216 270 Huntington, . 6 25 1,400 00 - 224 824 271 Charlemont, . 6 21.8 1,200 00 - 218 272 Scituate, . 6 21 2,900 00 - 240 273 Rockport, . 6 20.7 4,963 78 107 00 5,070 78 817									60 00
824 271 Charlemont, . 6 21.8 1,200 00 198 218 272 Scituate, . 6 21 2,900 00 467 240 273 Rockport, . 6 20.7 4,963 78 107 00 5,070 78 817	216	270							36 00
218 272 Scituate, 6 21 2,900 00 467 240 273 Rockport, . 6 20.7 4,963 78 107 00 5,070 78 817							_		-
240 273 Rockport, . 6 20.7 4,963 78 107 00 5,070 78 817						•	_		-
164 274 Edgartown 6 19.2 2,000 00 323			Rockport.				5,070 78		_
			Edgartown, .			-	' -	323	_
188 275  Milibury,   6 18.6  6,000 00  -   -   970	188	275		6 18.6		-	-	970	-
				l		<u> </u>	1	<u> </u>	

For 1868-70.	For 1870-71.	TOWNS.	Sum appropriated by towns for each child between 5 and 16 years of age.	Amount raised by taxes for the sup- port of Schools.		Income of Surplus Revenue and of sim- liar funds appropri- ated to Schools.	TOTAL.	No. of Children be- tween 5 and 15 years of age.	Amount contributed for board and fuel.
	276	Spencer,	<b>\$</b> 6 18	\$5,000		_	_	809	-
<b>25</b> 5		Royalston,	6 17.8		00	-	-	248	-
	278	Peru,	6 06.1	600		-	-	88	-
	279	Ashby, .	6 00	1,200		-	-	200	<b>224</b> 00
	280	Wilbraham, .	5 98.1	2,500		- -	e1 170 00	418 197	900 00
800		Worthington, .	5 98.1 5 96	1,000 1,500			\$1,178 22 1,770 17		<b>300 W</b>
208	283	Sharon,	5 90	1,980		210 11	1 1,1 10 11	336	-
281		Tyringham,	5 88.2		00	_	_	119	_
	285		5 87	2.000		219 00	2,219 00		7 00
	286		5 86.4			_	-	648	-
	287	Rowe, .	5 84	800		_	-	187	-
	288		5 80	2,500	00	_	-	431	-
257	289		5 75.9	900	00	90 57	990 57	172	-
276	290	Gill,	5 73 8		00	· -	-	122	890 00
816		Williamsburg, .	5 68.2	8,000		-	-	528	-
	292	Carver,	5 67	1,100	00	-	_	194	
	293	Rowley,	5 60 7	1,200	00	-	-	214	
	294	Harwich,	5 55 6		00	-	-	810	
259		Windsor,	5 55.6	800		-	_	144 270	1
252		Freetown, .	5 55.5 5 49.6	1,500 600	00	88 00	633 00		
823 905	298	Tolland,	5 45.5		00	00 00	000 0	220	
283		Cummington, West Boylston,	5 45 5		<del>00</del>		1 =	550	1
	300		5 45 4	1.800		_	_	330	
278		Medfield.	5 42 9	1,200		_	_	221	
	302	Auburn	5 38 1	1.200			_	228	
293		Webster.	5 85.7	4,800		-	_	896	) <u> </u>
	304	Monterey, .	5 29.8	800		·   –	-	151	
285	305	Plympton,	5 29.4	900	00	`\ -	_	170	.
	306	Chilmark, .	5 28 8	550	00	`\ -	-	10	
	307	Leyden,	5 21.7	600		\ <del>-</del>	-	118	
	308		5 20.8	1,000		7	-	193	
	309		5 18 5		89	- \	-	464	
	310	Wales,	5 18 5		00	- 1	4 -	133	
213		Stow,	5 16.8		00	-	\   -	859	
	$\frac{312}{318}$	Agawam,	5 15 8		00	-		233	
	314	Ludlow,	5 15 5 00	1,200	00	-	ι ζ -	36	
	315		4 88 3		00	98 80	1,098 8		
	316	W. Stockbridge,	4 85.4		00	-	1,00 <b>%</b>	412	660
831		Bernardston,	4 80.8	750		_		150	
	318	Duxbury,	4 79 6		ŏ	_	- '	417	
	819	Washington,	4 79	800		_	-	167	-
827		Holland,	4 76.2	400		_	-		-
262		Truro,	4 66.4	1,500	00	25 22	1,525 22	32	-
830	322	Hancock,	4 63.6		00	-	-	151	1 -
315		Berlin,	4 56.6		00	-	-	219	210
200	324	Sandisfield, .	4 48.3	1,300	00			290	3136 8

For 1869-79.	For 1876-71.	TOWNS.	Sum appropriated by towns for each child between 5 and 18 years of age.	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Revenue and of sim- ilar funds appropri- ated to Schools.	TOTAL.	No. of Children be- tween 5 and 15 years of age.	Amount contributed for board and fuel.
820	825	Mattapoisett, .	84 84.8	<b>\$1,200</b> 00	_	_	276	_
	326	Mashpee,	4 31	250 00	_	_	58	_
	327	Pepperell, Florida,	4 29 2	1,545 00	_	i -	860	_
<b>3</b> 08	828	Florida,	4 23 8	800 00	_	_	189	_
	829	Buckland, .	4 09.1	1,500 00	<b>\$182 30</b>	<b>8</b> 1,682 80	399	<b>\$60 00</b>
801	380	Southwick, .	4 08.6	900 00	92 96	992 96		20 00
280	331	Alford.	4 05 9	<b>824</b> 71	-	l - 1	80	-
884	332	Mt. Washington,	4 05.4	800 00	_	-	74	50 00
819	833	New Ashford, .	8 96.1	206 00	-	- 1	52	12 00
329	834	Richmond	8 78 8	800 00	_	-	214	180 85
835	335	Clarksburg, .	8 54.6	500 00	_	-	141	_
814	836		8 50	633 50	-	- 1	181	565 21
26	1 1	Chelsea,*.	-	_	-	-	-	_
		Ayer,†	_	_	-	-	-	-
	li	Gay Head,	- 1	_	-		-	-
		Maynard,† .	- 1	-	-	-	-	_

<sup>\*</sup> No returns received in 1871.

<sup>†</sup> New towns—no returns made in 1871.

### GRADUATED TABLES - FIRST SERIES.

### [COUNTY TABLES.]

Table showing the comparative amount of Money appropriated by the different Towns in each of the Counties in the State, for the education of each Child in the Town, between the ages of 5 and 15 years.

### BARNSTABLE COUNTY.

For 1866-70.	For 1870-71.	TOWNS.	Sum appropriated by towns for each child between 5 and 18 years of age.	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Revenue and of sim- ilar funds appropri- ated to Schools.	TOTAL	No. of Children be- tween 5 and 15 years of age.	Amount contributed for board and fael.
1	1	WELLFLEET, .	<b>8</b> 11 79.2	<b>\$</b> 5,000 00	_	_	424	-
2	$\bar{2}$	Yarmouth, .	10 78.2	4,000 00	_	_	371	_
24 5 3 8 6 9	3	Provincetown, .	9 50	7,000 00		-	787	-
5	4	Orleans,	9 20.5	2,200 00		- 1	239	-
3	5		9 08.9	8,000 00		-	885	<b>\$90 00</b>
8	6		8 84.4	6,500 00		-	735	-
6	7		8 47.5	1,000 00		-	118	-
9	8		7 57.5	2,000 00		- 1	264	-
	9		7 88.9	8,000 00		-	406	10 00
12	10		7 36.6	4,000 00		-	543	<b>-</b>
11	11		6 64.9	5,000 00	-	-	752	180 00
11 18	12		5 55.6	4,500 00	-	_	810	25 00
10	13	Truro,	4 66.4	1,500 00	<b>\$25 2</b> 2	\$1,525 22	327	-
-	14	Mashpee,	4 31	250 00	-	-	58	-
			!				l	<u> </u>

### BERKSHIRE COUNTY.

8 4 6 3 1 12	LENOX,	\$10 87 10 18.3 9 61.7 9 33.6 9 29.4 8 84.9 7 70.8 7 66.9 7 10.9 6 82.9	4,500 00 2,250 00	*174 00 - - - - - -	 \$4,674 00 - - - - - -	276 383 486 241 2,152 904 2,517 326 175 650	\$300 00 64 00 100 00 25 00
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### BERKSHIRE COUNTY-CONTINUED.

For 1869-70.	For 1870-71.	ewas.	Sum appropriated by towns for each child between 5 and 15 years of age.	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Revenue and of sim- liar funds appropri- ated to Schools.	TOTAL.	No. of Children be- tween 5 and 15 years of age.	Amount contributed for board and fuel.
26	11	Otis	86 39.8	<b>\$1,200</b> 00	865 84	<b>\$</b> 1,265 8 <b>4</b>	198	<b>8</b> 148 50
24	12	Lanesborough, .	6 32.9	2,000 00	-	_	816	
9	13	Lee,	6 26.4	5,750 00	- 1	-	918	
13 15	14	Peru,	6 06.1	600 00	-	-	99	-
15	15	Tyringham,	5 88.2	700 00			119	
17	16	New Marlboro',	5 87	2,000 00 800 00	219 00	2,219 00	<b>37</b> 8	
11	17	Windsor,	5 55.6	800 00	-	- 1	144	242 00
18	18	Becket,	5 45.4	1,800 00	-	-	830	304 00
10	19 20	Monterey, Cheshire,	5 29.8 5 00	800 00 1.810 00	-	-	151 362	410 00
18	21	W. Stockbridge,	5 00 4 85.4	1,810 00 2,000 00	-	-	302 412	66 00
21	22	Washington,	4 79	800 00			167	00 00
28	28	Hancock,	4 63.6	700 00	_	_	151	_
17 11 18 16 19 29 21 28 25 20	24	Sandisfield,	4 48.3	1,300 00	_	_	290	312 50
20	25	Florida,	4 23.3	800 00			189	_
14	26	Alford,	4 05.9	824 71	_ :	-	80	_
14 80 28 27	27	Mt. Washington,	4 05.4	800 00	_	- 1	74	50 00
28	28	New Ashford, .	8 96.1	206 00		-	52	12 00
27	29	Richmond, .	<b>8</b> 73.8	800 00		-	214	130 85
81	30	Clarksburg, .	3 54.6	500 00		-	141	
22	81	Savoy,	8 50	633 50	-	-	181	565 21
	ŀ				İ	1	İ	l

### BRISTOL COUNTY.

									1	
1	1	NEW BEDFORD.			<b>\$</b> 53,938			· -	3,777	-
2 5 6	2	Fairhaven,	10	67.9				-	515	-
5	3	Attleborough, .	8	66 3			-	-	1,212	-
6	4	Taunton,	8	66.2			<b>\$</b> 69 09	30,069 09	3,471	-
15	5	Rehoboth, .	8	48.5	2,800	00	-		330	_
15 8		Acushnet, .	8	47.4	2,000	00	-	-	286	-
10	7	Easton,	8	46.2	6,400	00	_	-	780	-
10 7	8	Dighton,	8	44.6	2,500	00	_	_	296	_
4	9	Westport, .	8	21.2	4,500	00	_		548	-
9	10	Swansea,	8	12	2,062	48	_	_	254	<b>8</b> 65 00
14	11	Berkley,	8	10.8	1,200	00	_	- '	148	_
8	12	Fall River,	7	92.9	46,200	00	-	-	5,827	_
12	13	Dartmouth, .	7	03.1	4,500	00	_	-	640	190 00
18		Norton,	6	68.9	2,000	00	_	_	299	-
11	15	Seekonk,	6	59.8		00	_	_	182	22 00
19	16	Somerset, .	6	37.5	2,524	39	-	_	396	_
17		Raynham, .	6	28.7				_	334	_
16		Freetown, .	5	55 5				_	270	_
18		Mansfield, .	5	18.5	2,405	89	_	l –	464	-
		,			) ´			İ		
								<del></del>	<u>'                                    </u>	

### DUKES COUNTY.

For 1869-70.	For 1870-71.	towns.	Sum appropriated by tewns for each child between 5 and 15 years of age.	Amount raised by taxes for the support of Schools.	Income of Surplus Revenue and of sin- ilar funds appropri- ated to Schools.	TOTAL	No. of Children be- tween 5 and 16 years of age.	Amount contributed for board and fuel
8 4 1 2	1 2 3 4 5	TISBURY, Gosnold, . Edgartown, Chilmark, Gay Head,	\$6 98.4 6 57.9 6 19 2 5 23.8	\$2,200 00 125 00 2,000 00 550 00		- - - -	315 19 323 105	-

### ESSEX COUNTY.

			<del></del>			_				
1	1	NAHANT, .	817	89.5	81,700	00	_	_	95	_
2	2	Swampscott, .	15	94 2	5,500	00	-	_	345	-
14	8	Andover,	18	92	9,576	42	-	_	688	-
6	4	Peabody,	18	19.4	19,000	00	-	-	1,440	-
4	5	Haverhill, .	12	24 4	26,000	00	\$521 18	26,521 18	2,166	-
5 15	6	North Andover,	11	62.8		00		-	516	-
15	7	Bradford, .	11	83.5		00		_	397	-
19	8	Methuen, .	10	80.8		00		5,696 00	527	<b>\$20 00</b>
7	9	Newburyport, .	9	788		00		_	2,452	-
20	10	Lynnfield, .	9	<b>67</b> .8		00		-	124	-
16	11	Wenham, .	9	68.9	1,600	00		-	166	-
9	12	Lawrence, .	9	50.5		66		-	4,846	-
8	13	Beverly,	9	44.1	12,000	00		_	1,271	-
11	14		9	39.6	2,800	00		_	298	-
22	15		9	<b>37.5</b>	3,900	00		_	416	-
10	16	Gloucester, .	9	87.1	29,200	00		-	8,116	
8	17	Salem,	9	28.8		99		_	5,340	
13	18	Lynn,	9	218		55		-	5,904	-
17	19	Saugus,	8	82.4		00		-	466	-
18	20	Danvers,	8	26.3		00	800 00	9,899 00	1,198	-
25	21	Hamilton, .	7	69.2	1,000	00		_	130	-
21	22	Ipswich,	7	69.2	4,400	00		_	572	-
12	23	Boxford,	7	62.6	1,200	00	58 10	1,258 10	165	
23	24	Marblehead, .	7	61.2	11,000	00		-	1,445	200 00
31	25		7	<b>29</b> 6	1,700	99		-	233	-
82	26		6	89.6		00	167 12	5,117 12	742	
30	27	Amesbury, .	6	88.9		00		_	958	215 00
26	28		6	763		18		_	431	-
24	29	Essex,	6	72	2,500	00		_	372	
29	<b>3</b> 0		6	48.1	1,400	00		-	216	
34	31	Topsfield, .	6	<b>32 9</b>		00			237	-
28	32	Rockport, .	6	20.7	4,963	78		5,070 78	817	-
83	83		5	90	1,980	00		-	336	-
27	84	Rowley,	5	60.7	1,200	00	-	-	214	-
I			<u> </u>				l			
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### FRANKLIN COUNTY.

For 1888-70.	For 1870-71.	TOWNS.	Sum appropriated by towns for each child between 5 and 18 years of age.	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Revenue and of sim- ilar funds appropri- ated to Schoole.	TOTAL.	No. of Children be- tween 5 and 15 years of age.	Amount contributed for board and fuel.
10 24 17 10 18 14 21 16 19 12 28	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	GREENFIELD, Warwick, Wendell, . Erving, . Erving, . New Salem, Ashfield, . Conway, . Shutesbury, Heath, . Sunderland, Deerfield, Whately, . Shelburne, Hawley, . Leverett, . Northfield, Coleraine,	 \$11 17.9 10 12.9 10 12.7 10 08.8 9 49.4 9 22.5 9 17.4 9 09.1 8 18.9 7 78.4 7 12.8 6 92.8 6 85 6 88	\$7,300 00 1,200 00 800 00 1,000 00 2,000 00 2,500 00 1,000 00 1,500 00 4,980 00 1,800 00 2,500 00 900 00 2,500 00 2,500 00 2,000 00	\$56 00 54 00	\$1,256 00 1,054 00 - - - - - - - - - - - -	653 124 79 105 158 214 271 109 110 165 602 167 851 180 148 880 813	\$15 00 204 00 102 00 - 279 19 240 00 - 150 00
12 28 15 11 24 9 22 18 20 25	18 19 20 21 22 28 24 25	Monroe, . Orange, . Charlemont, Rowe, . Montague, Gill, Leyden, . Bernardston,	 6 39 6 29.7 6 21.8 5 84 5 80 5 73.8 5 21.7 4 80.8 4 09.1	2,000 00 250 00 2,500 00 1,200 00 800 00 2,500 00 700 00 600 00 750 00 1,500 00	12 00 - - - - - - - 182 80	11111	313 41 897 193 187 431 122 115 156 399	390 00 845 00 87 00 60 00

### HAMPDEN COUNTY.

			1							
1	1	SPRINGFIELD,	\$16		\$67,714			-	4,232	-
2	2	Westfield,		58.9		00	-	-	1,181	_
10	8	W. Springfield,	18	92.1				- 1	431	_
8	4	Longmeadow, .	11	78.8	8,000	00	<b>8</b> 184 22	<b>\$3,134</b> 22	267	_
5	5	Montgomery, .	10	75.4				742 00		<b>\$</b> 90 00
4	6	Chicopee, .	10	48.8	17,708	54	699 71	18,408 25	1,764	
10 8 5 4 6	7	Holyoke,	9	63.9	18,700	00	_	-	1,940	
14	8		8	36.9	1,916	52	_	_	229	_
18	9		8	29.9	2,000	00	_	-	241	125 00
9	10		8	25.7	1,800	00	_	_	218	_
7	11	Monson,	7	38	4,000	00	-	_	542	_
16	12	Russell,	7	35.8	1,000	00	_	_	136	_
15	18	Palmer	6	448	5,000	00	-	_	776	_
18	14	Wilbraham, .	5	98.1	2,500	00	-	-	418	24 00
20	15	Tolland,	5	49.6	600	00	88 00	683 00	115	215 60
11	16	Wales,	5	18.5	700	00	-	-	185	_
		•								

### HAMPDEN COUNTY-CONTINUED.

For 1869-70.	For 1870-71.	TOWNS.		Sum appropriated by towns for each child between 5 and 16 years of	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Revenue and of sim- ilar funds appropri- ated to Schools.	TOTAL.	No. of Children be- tween 5 and 16 years of ago.	Amount contributed for board and fuel.	
12 8 19 21 17	17 18 19 20 21	Agawam, Ludlow, . Blandford, Holland, . Southwick,	•	\$5 15 8 5 15 4 88.3 4 76.2 4 08.6	\$1,850 00 1,200 00 1,000 00 400 00 900 00	- \$93_80 92_96	- \$1,093 80 - 992 96	84	-	

### HAMPSHIRE COUNTY.

6	1	NORTHAMPTON,	<b>\$</b> 12	<b>39.3</b>	\$24,080	00	_	_	1,943	-
	2	Granby,	12	26.1	1,925	00	-	_	157	-
1	3	Amherst,	12	10.3	8,000	00	_	_	661	\$300 00
9	4	Belchertown,	11	11.1	5,000	0υ	_	_	450	-
8	5		10	58.4				_	137	-
2 1 9 3 7	6	Prescott,	10	17.4				<b>89</b> 36 00	92	_
11	7		9					_	151	
			9	70.9		00		_	103	
4 5 8	9			67.3				5,155 80		
8	10		8		7,000			7,181 37		
16				29.6				_	223	
18	12	Easthampton, .	7					_	768	
10	13	Pelham,	7					_	129	
15	14	Hadley,	7					_	426	
13		Plainfield,	7	44 7	700			_	94	
14	16	Goshen, .	7	14.3				_	70	
12			6	64 9				_	376	
20		Chesterfield,	6	494				_	154	
17	19		8	25	1,400			_	224	
22		Worthington, .	5					1,178 22		
19			5	-						
28		Williamsburg, .		68 2					528	
21	23		5	45.5					220	
~1	~0	Commingent, .	"	10.0	2,200	30	_	1		1
			ı					I	ı	

### MIDDLESEX COUNTY.

8 8 Arlington, . 16 97.4 11,457 59 675 -	2 4 8 1 12 6 5	4 5 6 7	NEWTON, Belmont, . Lexington, Brighton, Somerville, Waltham, Medford, . Arlington,	•	22 21 20 18 17 17	52 7 21.2 30.7 07.4 77.1 67.2	7,000 17,200 46,450 25,234 19,740	00 00 00 00 77 00	11111	- - - - -	2,386, 273, 830, 847, 2,570, 1,420, 1,117, 675,	
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### MIDDLESEX COUNTY-CONTINUED.

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			appropriated was for each between 5	raised by or the sup- Bohoois.	Income of Surplus Bevenue and of sim- ilar funds appropri- ated to Schools.		Children ben 5 and 15 s of age.	mount contributed for board and fuel.
룓	ᇋ	TOWNS.	de de		2 2 2	TOTAL	305	82
For 1869-70.	1870-71.		25 ·	= 5	SEES		No. of Cl tween years o	100
12	For 1		Spid Spid Spid Spid Spid Spid Spid Spid	moun taxes port	SE SE		34.0	86
Fi	R <sub>i</sub>		66		HH2.		×	<u> </u>
					i			1
9	9	Framingham, .	<b>\$16</b> 66.6	<b>\$12,400 00</b>	-	-	744	-
11	10	Weston,	15 98.5	8,133 00	-	-	196	
7	11	Watertown,	15 98.2	14,000 00	-	-	876	
16 13	12 13	Winchester, .	15 20.3 14 81.3	9,000 00 90,075 <b>5</b> 8	-	-	592 6,081	-
10	14	Charlestown, .	14 85.2	90,075 <b>5</b> 8 6,200 00	_	-	432	<b>-</b>
18	15	Everett, Cambridge, .	13 72.1	110,951 98	_	_	8,086	
14	16	Tamall	18 65	87,865 17	_		6,437	_
15	17	Malden,	13 40.8	19,000 00	_	_	1,417	_
21	18	Reading,	12 79.7	7,000 00	_	_		<b>\$</b> 300 00
10	19	Melrose,	12 77.3	8,200 00	_	_	642	
19	20	Concord,	12 58.9	5,300 00	_	_	421	_
17	21	Lincoln,	11 48.6	1,700 00	_	_	148	-
20	22	Stoneham, .	11 07.6	8,750 00	_	_	790	
81	23	Boxborough, .	10 88	750 70	-	_	69	_
23	24	Burlington	10 67.9	1,100 00	_	-	103	
28	25	Woburn,	10 47.4	19,314 95	-	-	1,844	-
22	26	Wakefield,	10 17.6	7,500 00	-	-	737	-
26	27	Ashland,	10 15 2	4,000 00	-	-	894	-
25	28	Tyngsborough,	9 81.8	1,050 00	-	-	107	-
84	29	Sherborn, .	9 56.9	2,000 00	-	-	209	10.00
24 83	80 81	Dunstable,	9 41 2 9 02.2	800 00	_	-	85 665	
<b>3</b> 0	32	Holliston, . Marlborough, .	8 52.4	6,000 00 16,000 00	_	_	1,877	
35	33	Podford	8 45.7	1,300 00	<b>87</b> 0 06	<b>\$1,37</b> 0 06	162	
27	84	Wayland,	8 43.9	2,000 00	<b>V.</b> 0 00	41,01000	237	
40	85	Hopkinton,	8 36.4	9,000 00	_	_	1,076	
43	86	Littleton,	8 33.8	1,700 00	_	_	204	
45	87	Natick,	8 33 3	11,900 00	_	_	1,428	
29	38	Townsend, .	8 06 4	3,000 00	_	-	372	-
87	89	Groton,	8 01.1	6,000 00	-	_	749	45 00
88	40	Acton,	7 94.1	2,325 00	89 25	2,414 25	804	
52	41	North Reading,	7 86 5	1,400 00	-		178	
50	42	Tewksbury, .	7 84	1,800 00	97 27	1,897 27	242	
42	43	Dracut,	7 83.3	3,000 00	-	-	<b>3</b> 83	
51	44	Carlisle,	7 39.1	850 00	-	-	115	
46	45	Sudbury,	7 88 8	2,800 00	-	-	879	r .
<b>39</b> <b>4</b> 1	46 47	Hudson,	7 38.5 7 32.4	5,000 00 2,600 00	_	-	677 855	
49	48	Billerica, Wilmington, .	7 11.9	1,075 00	<u>-</u>	_	151	<u>-</u>
86	49	Westford,	7 11.8	2,500 00	119 50	2,619 50	368	
48	50	Shirley,	6 53.6	2,000 00		_,010 00	<b>3</b> 06	
47	51	Chelmsford,	6 50.8	8,000 00	_	_	461	
32	52	Ashby,	6 00	1,200 00	_	_	200	
44	53	Stow,	5 16 8	2,000 00	_	_	887	_
58	54	Pepperell, .	4 29.2	1,545 00	_	-	860	_
1	55	Ayer,	-	-	_	-	-	-
i	56	Maynard, .	-	-	-	-	-	-
			<u> </u>				<u> </u>	
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### NANTUCKET COUNTY.

For 1869-70.	For 1870-71.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 years of age.	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Revenue and of sim- liar funds appropri- ated to Schools.	TOTAL.	No. of Children be- tween 5 and 15 years of age.	Amount contributed for board and fuel.
		NANTUCKET, .	<b>\$</b> 12 21.4	<b>\$8,000 00</b>	-	_	655	-

### NORFOLK COUNTY.

_		<del></del>	-								
8	1	BROOKLINE,	•	<b>\$</b> 25	82.9	\$28,490	04	_	_	1,103	-
4	2	Milton		21	45.9	10,000	00	_	-	466	
4 2 5 6 7 8	8	West Roxbury	,	18	40.5	80,000	00	-	_	1,650	-
5	4	Hyde Park.		15	78.9	15,000	00	_	_	950	-
6	5			14	51.4	10,000	00	_	_	689	
7	6	Dadham		18	54.3	19,217	50	-	_	1,419	_
8	7			11	43.9	17,570	00	_	_	1,536	_
11	8	Walpole, .		11	892				_	395	_
13	9	Weymouth,		10	50.9				_ '		<b>83</b> 00 00
9		D-16 3 1		9	91	2,000	00	<b>\$140</b> 68	\$2,140 63	216	_
10	11	XX7		9	84.4	4,000	00	223 22	4,228 22	429	
18	12	M.J		9	16.7			-		600	
_	13	Mancall		9					_	222	
15	14	Cohasset, .		8					_		235 00
12	15	Foxborough,		8	62.6				4,683 85	543	
14	16	Canton, .		8						935	
17		Franklin,.			88 9				_	507	
20		Down		7					977 10		
19		Randolph,		7	21.5				-	1,386	
22		Stoughton,	_	7			00		_	1,128	
16	21	Braintree.		6		6,000				881	
21		Sharon, .	-	5		1,500			1,770 17	297	
28		Medfield	•	5					-,	221	
			•		A=1.0	1,200	v		_	261	i -
			_							I	

### PLYMOUTH COUNTY.

#### PLYMOUTH COUNTY-CONTINUED.

For 1888-76.	For 1878-71.	TOWNS.	Sum appropriated by towns for each child between 5 and 15 years of sec.	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Revenue and of sim- liar funds appropri- ated to Schools.	TOTAL.	No. of Children be- tween 5 and 15 years of age.	Amount contributed for board and fuel.
21 12 10 17 23 20 19 18 13 24 15 22 25	18 14 15 16 17 18 19 20 21 22 23 24 25	Pembroke, . Wareham, .	\$7 21.1 7 07.1 6 87.3 6 55.7 6 52.2 6 40 6 38.3 6 21 5 67 5 29.4 5 20.8 4 79.6 4 34.8	\$1,500 00 7,000 00 2,000 00 14,000 00 1,800 00 1,200 00 2,900 00 1,100 00 2,000 00 1,000 00 1,200 00	-	111111111	208 990 291 2,185 276 625 188 467 194 170 192 417 276	
1 8 4 2	1 2 8 -	BOSTON, Revere,	819 56.8 14 12 6 11 29	\$906,000 00 2,700 00 1,400 00	-	- - - -	46801 191 124	- - -
		w o	RCES	TER C	о U N :	ΓΥ.		
15 1 2 8 16 6 4 21 25 11 18 17 7 8 12 10 24 89 5	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	Lunenburg, . Northborough, . Leominster, . Leicester, Fitchburg, . Charlton, . Westminster, . Southborough, . Barre, . Warren, . Shrewsbury, . Brookfield, . Hubbardston, . Harvard, .	\$18 12.2 12 84.8 11 81.2 11 29.8 11 29.3 10 27.2 9 97.6 9 96.7 9 72.2 9 69.8 9 50.7 9 12.8 9 00.7 8 89.7 8 57.1 8 56.8 8 44.1	\$4,200 00 96,606 29 1,571 00 2,175 00 8,000 00 4,725 00 21,000 00 8,000 00 2,800 00 4,500 00 4,500 00 2,600 00 2,600 00 2,500 00 2,400 00 5,835 00 1,800 00	\$175 00 196 00 	\$2,850 00 8,196 00 	320 7,519 188 208 283 607 460 2,105 301 288 464 426 490 285 433 281 280 681 154	*95 00 

# WORCESTER COUNTY-CONTINUED.

						<del></del>		
For 1869-18.	For 1870-71.	TOWNS.	Sum appropriated by towns for each child between 6 and 15 years of age.	Amount raised by taxes for the sup- port of Buhools.	Income of Surplus Revenue and of sim- ilar funds appropri- ated to Schools.	TOTAL.	No. of Children be- tween 5 and 15 years of age.	A mount contributed for beard and fuel.
18	20	Douglas,	<b>8</b> 8 43.4	<b>\$3,500 00</b>	_	_	415	-
14	21	Oxford,	8 21.2	4,500 00	-	_	548	-
23	22	Winchendon, .	8 06 4	5,000 00	_	_	620	-
9	23	Uxbridge, .	8 05.6	5,000 00	<b>\$220 00</b>	<b>\$</b> 5,220 00	648	-
27	24	Hardwick, .	8 04.1	3,000 00	95 63	3,095 63	385	-
48	25	Athol,	7 88 6	4,566 00	-	_	579	-
87	26	Upton,	7 83.2	2,772 70	-	-	354	-
81	27	Clinton,	7 82.2	8,361 89	-	-	1,069	-
82	28	Boylston,	7 79.2	1,200 00	-	-	154	-
26	29	Templeton, .	7 72.4	3,800 00	-	-	492	-
22	30	Petersham, .	7 56.3	1,800 00			238	-
29	31	Princeton, .	7 47.3	1,700 00	71 00	1,771 00	237	_
20	32	Holden,	7 45.9	2,700 00	-	- 1	362	-
28	83	Ashburnham, .	7 40.7	3,000 00	-	-	405	-
49	84	Grafton,	7 19.6	6,800 00	-	-	945	-
56	35	Dudley,	7 02.3	4,200 00	-	-	598	-
88	86	Sturbridge, .	7 00.6	2,200 00	-	-	814	-
84	87	Mendon,	6 84 6	1,650 00	-	-	241	
85	88	Bolton,	6 81.8	1,200 00	-	-	176	\$10 00
44	89	W. Brookfield,	6 73.8	2,500 00	-	_	371	-
19	40	Sterling,	6 71.1	2,000 00	-	_	298	-
80	41	Rutland,	6 70.4	1,608 96	-	-	240	-
45	42	Milford,	6 67.8	16,000 00	-	-	2,396	-
86	43	Paxton,	6 66.7	800 00	-	-	120	-
58	44	Dana,	6 62.2	1,000 00	-	_	151	-
52	45	Sutton,	6 55.4	3,500 00	-	_	534	-
41	46	Northbridge, .	6 48.4	5,200 00			802	-
54	47	Blackstone,	6 47.1	6,500 00	248 00	6,743 00	1,042	-
50	48	Southbridge, .	6 87.4	7,400 00	-	-	1,161	-
40	49	N. Brookfield,	6 36 1	5,000 00	-	-	786	-
42	50	Phillipston, .	6 28.9	1,000 00	_	_	159	-
83	51	Millbury,	6 18.6	6,000 00		-	970	-
48	52	Spencer,	6 18	5,000 00	-	-	809	-
47	53	Royalston,	6 17.3	1,500 00	•	-	243	-
46	54	Gardner, .	5 86.5	3,800 00	-	-	648	60 00
51	55	West Boylston,	5 45.5	8,000 00	-	-	550	60 00
57	56	Auburn,	5 38 1	1,200 00	-	-	223	-
55	57	Webster,	5 35.7	4,800 00	_ '	-	896	-
58	58	Berlin,	4 56 6	1,000 00	<b>-</b>	-	219	•
		<u> </u>	l		1		<u>'                                      </u>	

A GRADUATED TABLE - First Series.

Showing the Comparative Amount of Money appropriated by the different Counties in the State for the Education of each Child between the ages of 5 and 15 years in the County.

. 15-07-21 .0°E	O O N	TIES.			Sum appropriated by Counties for each Child between 6 and 15 years of age.	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Revenue and similar funds appropri- ated to Schools.	TOTAL	No. of Children be- Amount contrib- tween 5 and 16 nted for board years of age. and fuch.	Amount contrib- uted for board and fuel.
1 STIPPOLK	•	•	•	•	\$19 16.1		ı		i .	
2 Middlesex,	•	•	•	•	18 17 1		8376 08			8369 00
8 Nantucket,	•	•	•	•	12 21.3			8,000 00	655 00	
4 Norfolk,	•	•	•	•	12 04.1			217,272 51	18,045 00	710 00
5 Hampden,	•	•	•	•	11 33.5			156,279 97		1,281 21
8 Essex,	•	•	•	•	9 43.8			364,696 93		865 80
7 Hampshire,	•	•	•	•	88 8			80,846 96		2,597 00
8 Bristol,	•	•	•	•	9 20.5			183,900 16		277 00
9 Worcester,	•	•	•	•	8 73			824,019 97		244 00
0   Barnstable,	•	•	•	•	8 09.3			53,975 22		305 00
1   Plymouth,	•	•	•	•	7 99.1			102,748 14		1,140 00
2 Franklin.	•	•	•	•	7 57.8			45,984 30		1,872 19
8 Berkshire,	•	•	•	•	7 80.4			95,577 08		2,879 06
1 Dukes,	•	•	•	•	6 39.7		,	4,875 00		
-				-						
				₹	GGREGAT	FOR	1	TE.		
	•	•	•	•	\$11 78.3	\$3,272,335 83	\$6,240 68	\$3,278,576 01	\$278,249 00	\$12,540 26
•							•			•
	SUFFOLK Middlessan Middlessan Middlessan Mantucke Norfolk, Hampden Essex, Hampshir Bristol, Worcestabil Bristol, Plymouth Franklin, Berkshire Dukes,	SUFFOLK Middleses Middleses Nantucke Norfolk, Hampehir Essex, Hampehir Bristol, Worestes Barnstabli Plymouth Franklin, Berkshire Dukes,	SUFFOL Middles Nantuck Norfolk, Hampel Essex, Hampel Bristol, Worstest Barnets Barnets Plymout Franklir Berkahii Dukes,	SUFFOLK Middleses Middleses Nantucke Norfolk, Hampehir Essex, Hampehir Bristol, Worestes Barnstabli Plymouth Franklin, Berkshire Dukes,	SUFFOLK, Middlesex, Nantucket, Norfolk, Hampden, Essex, Hampden, Bristol, Worcester, Barnstable, Plymouth, Franklin, Berkshire, Dukes,	SUFFOLK, Middlesex, Nantucket, Norfolk, Hampden, Essex, Hampden, Bristol, Worcester, Barnstable, Plymouth, Franklin, Berkshire, Dukes,	Sum appropriated by Counties for each Counties for each Counties for each Counties for each Counties for each Counties for each Counties for each Counties for each Counties for each Counties for each Middlesex,   12 21.3   1	Sum appropriated by   Amount raised by   Bevenues Counties for each   Lincome of Counties for each   Lincome of Counties for each   Lincome of Counties for each   Lincome of Lincome of Counties for each   Lincome of Li	Sum appropriated by Countes for each C	SUPPOLK   Counties for each   Counties for e

#### A GRADUATED TABLE - FIRST SERIES.

Showing the Comparative Amount of Money, including Voluntary Contributions, appropriated by the different Counties in the State, for the Education of each Child between the ages of 5 and 15 years in the County.

For 1888-70.	For 1870-71.			COU	NTI	E8.					TOTALS.
1	1	SUFFOLK,		•		•		•			<b>\$</b> 19 16 1
8	2	Middlesex,	•	•	•		•	•			13 17.8
4.	8	Nantucket,	•		٠.	٠.	•	•			12 21 3
2	4	Norfolk, .		•	•	•	•	•	•		12 08
5	5	Hampden,	•	•		•	•	•		.	11 42.8
8	6	Hampshire,		•		•	•		•	.	9 63.
7	7	Essex, .		•	•	•		•			9 46.1
6	8	Bristol, .		•	•	•	•	•	•		9 21.9
9	9	Worcester,			•	•	•	•	•	.	8 78.6
11	10	Barnstable,		•		•	•				8 14
10	11	Plymouth,		•	•	•	•			.	8 08
18	12	Franklin,	•	•	•	•		•		.	7 88.7
12	18	Berkshire,	•		•					.	7 524
14	14	Dukes, .	•	•	•	•	•	•	•	$\cdot$	6 39.7
	Aggr	egate for the Stat	te,	•	•	•	•	•	•		\$11 82.8

#### GRADUATED TABLES-SECOND SERIES.

The next Table exhibits the appropriation of the cities and towns, as compared with their respective valuations in 1865.

The first column shows the rank of the cities and towns in a similar Table for 1869-70.

The second column indicates, in numerical order, the precedence of the cities and towns in respect to the liberality of their appropriations for 1870-71.

The third consists of the names of the cities and towns, as numerically arranged.

The fourth shows the percentage of taxable property appropriated to the support of the Public Schools. The result is equivalent in value to mills and hundredths of mills. The decimals are carried to three figures in order to indicate more perfectly the distinction between the different towns. The first figure (mills) expresses the principal value, and is separated from the last two figures by a point.

The appropriations for schools are not given in the following Table, as they may be found by referring to the previous Tables, also in the Abstract of School Returns, commencing on page ii. These appropriations include the sum raised by taxes, the income of the surplus revenue, and of such other funds as the towns may appropriate at their option, either to support Common Schools, or to pay ordinary municipal expenses. The income of other local funds, and the voluntary contributions are not included in the estimate. The appropriations are reckoned the same as in the first series of tables, and for the same reasons.

The amount of taxable property, in each city and town, according to the last State Valuation, is also omitted, as it is already given in the foregoing Abstract of School Returns.

If the rank assigned to towns in the next Tables is compared with the rank of the same town in the former series, it will be seen that they hold, in many instances, a very different place in the scale.

#### GRADUATED TABLES - SECOND SERIES.

#### [FOR THE STATE.]

A Graduated Table, in which all the Towns in the State are numerically arranged, according to the percentage of their taxable property, appropriated to the support of Public Schools, for the year 1870-71.

For 1869-79, according to Valuation of 1865.	For 1870-71, according to Valuation of 1865.	TOWNS.	Percentage of Valuation appropriated to Public Schoolse equivalent to milis and hundredths of milis.	For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valu- ation appropriated to Public Mebools- equivalent to mills and hundredths of mills-
2	1	COMPONITED	9 000 17	33	33	0	8.005-06
4	2	SOMERVILLE,	7-25	94	34	Springfield, . Northampton, .	5-03
1	8	Holyoke, Wellfleet,	7-14	18	35	Westhampton, .	4-98
16	1 4	Westborough, .	6-78	60	36	D L - J	4-97
8	5	Stoneham, .	6-56	68	37	Distable	4-95
10	6	Gloucester, .	6-48	8	38	Ul	4-93
28	7	Natick,	6-46	31	39	OL and and a second	4-92
50	8	No Bridgew'r,	6-45	41	40	Worcester.	4-90
15	9	Ashland,	6-32	49	41	Milford,	4-89
7	10	Marlborough, .	6-32	35	42	Northbridge,	4-88
19	liĭ	Winchester, .	6-18	76	43	No. Brookfield,	
56	12	Dudley,	6-16	iĭ	44	Melrose,	4-81
6	13	Erving,	6-08	22	45	Attleborough, .	4-77
51	14	Weymouth, .	5-98	5	46	Malden.	4-70
29	15	Adams,	5-97	187	47	Russeil,	4-70
- 9	16	Haverhill	5-91	73	48	Southborough, .	4-70
32	17	Chicopee, .	5-88	55	49	Montgomery,	4-57
14	18	Warwick, .	5-69	46	50	South Hadley,.	4-67
27	19	Hopkinton	5-64	38	51	Bellingham, .	4-61
21	20	Needham.	5-56	78	52	Plymouth, .	4-61
20	21	Newton,	5-51	40	53	Stoughton, .	4-39
30	22	Ware,	5-49	43	54	Warren,	4-39
192	28	Heath,	5-47	58	55	Quincy	4-58
24	24	Lynn,	5-41	42	56	Abington,	4-57
64	25	Reading	5-41	44	57	Shutesbury, .	4-56
69	26	Bradford, .	5-40	45	58	Eastham	4-56
17	27	Florida,	5-24	87	59	Waltham.	4-55
25	28	Marblehead, .	5-16	228	60	W. Springfield,	4-55
92	29	Georgetown, .	5-18	47	61	Wareham, .	4-58
36	30	Watertown, .	5-08	48	62	Webster	4-53
82	31	Westfield, .	5-08	85	63	Belchertown, .	4-51
13	82	Pelham,	5-06	89	64	Brighton, .	4-51
		·				_ ,	

Towns.								
52         66         New Salem,         4-46         97         115         Templeton,         3-88           83         67         Provincetown,         4-44         98         116         Westminster,         3-88           72         68         Framingham,         4-43         244         118         Sheffield,         3-87           65         70         Danvers,         4-42         155         119         Woburn,         3-87           37         71         West Boylston,         4-42         182         120         Groton,         3-86           95         72         Methuen,         4-41         118         121         Greenfield,         3-84           95         73         Harwich,         4-39         169         123         Gratton,         3-80           85         75         Southbridge,         4-36         101         124         Greenwich,         3-82           136         77         Amherst,         4-31         104         126         Ashburnham,         3-80           57         78         E. Bridgewater,         4-31         105         128         Paintree,         3-80           100	For 1989-79.	For 1870-71.	TOWNS.	Percentage of Valuation appropriated to Public Schoolsequivalent to milia and hundredths of mills.	For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valu- ation appropriated to Public Schools— equivalent to milis and hundredths of milis.
62         66         New Salem,         4-48         97         115         Templeton,         3-88           88         67         Provincetown,         4-44         98         116         Westminster,         3-88           72         68         Framingham,         4-43         244         118         Sheffield,         3-87           65         70         Danvers,         4-42         155         119         Woburn,         3-87           37         71         West Boylston,         4-41         118         120         Groton,         3-86           95         73         Harwich,         4-89         169         122         Greenfield,         3-84           95         73         Harwich,         4-39         169         123         Gratton,         3-80           85         75         Southbridge,         4-36         101         124         Greenwich,         3-82           186         77         Amherst,         4-31         104         126         Ashburnham,         8-80           57         78         E. Bridgewater,         4-31         105         128         Braintree,         3-80           100	100	1	<b>.</b>	0004.40				
83         67         Provincetown,								
72         68         Framingham,								
28								
66         70         Danvers,					1			
37								
125								
95								
88         74         Medway,         4-39         159         123         Grafton,         3-82           136         76         Middleton,         4-36         101         124         Greenwich,         3-82           136         76         Middleton,         4-31         104         126         Greenwich,         3-82           86         77         Amherst,         4-31         104         126         Ashburnham,         8-80           57         78         E. Bridgewater,         4-31         105         128         Swampscott,         3-80           100         80         Winchendon,         4-38         138         129         Upton,         3-76           67         82         Dennis,         4-28         107         130         Becket,         3-76           67         82         Dennis,         4-22         162         132         Granville,         3-75           84         83         Prescott,         4-22         162         132         Granville,         3-75           77         84         Truro,         4-22         113         13         Nantucket,         3-71           86         85								
58         75         Southbridge,         4-36         101         124         Greenwich,         3-81           86         77         Amherst,         4-31         104         126         Ashburnham,         3-80           57         78         E. Bridgewater,         4-31         105         128         Swampscott,         3-80           100         80         Winchendon,         4-80         138         129         Upton,         3-80           67         82         Dennia,         4-28         107         130         Becket,         3-76           67         82         Dennia,         4-28         107         130         Becket,         3-76           67         82         Dennia,         4-22         162         132         Granville,         3-75           84         83         Prescott,         4-22         118         133         Nantucket,         3-71           77         84         Truro,         4-22         115         134         Southampton,         3-68           114         86         Athol,         4-21         116         185         Gt. Barrington,         3-67           79         88 </td <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
136	58	75	Southbridge.	4-36				
86         77         Amherst.         4-31         104         126         Ashburnham,         3-80           57         78         E. Bridgewater,         4-31         112         127         Braintree,         3-80           62         79         Millbury,         4-31         105         128         Swampscott,         3-80           100         80         Winchendon,         4-28         107         130         Becket,         3-80           67         82         Dennia,         4-23         109         131         Clarksburg,         3-76           84         83         Prescott,         4-22         162         132         Granville,         3-71           77         84         Truro,         4-22         116         135         Granville,         3-71           78         85         Wakefield,         4-22         116         135         Granville,         3-71           71         86         Athol,         4-21         116         135         Granville,         3-71           71         87         Gradner,         4-18         137         Rehoboth,         3-62           72         89         Lowel	136	76	Middleton, .	4-33				
57         78         E. Bridgewater, 62         4-81         112         127         Braintree,         3-80           62         79         Millbury,         4-31         105         128         Swampscott,         3-80           100         80         Winchendon,         4-80         138         129         Upton,         3-76           67         82         Dennia,         4-28         107         130         Becket,         3-75           67         82         Dennia,         4-22         162         132         Granville,         3-75           84         83         Prescott,         4-22         162         132         Granville,         3-75           77         84         Turo,         4-22         115         134         Southampton,         3-63           114         86         Atbol,         4-21         116         135         Suthampton,         3-67           79         88         Lowell,         4-19         158         137         Reboboth,         3-65           72         89         Lancaster,         4-18         137         138         Fall River,	86	77		4-31	104	126		8-80
100   80   Winchendon,   4-80   138   129   Upton,		78	E. Bridgewater,	4-81	112	127	Braintree,	3-80
124 81 Cambridge, . 4-28 107 130 Becket, . 3-76 67 82 Dennis, . 4-28 109 131 Clarksburg, . 3-75 84 83 Prescott, . 4-22 162 132 Granville, . 3-71 77 84 Truro, . 4-22 113 133 Nantucket, . 3-71 68 85 Wakefield, . 4-22 115 134 Southampton, . 3-63 114 86 Athol, 4-21 116 135 Gt. Barrington, . 3-67 79 88 Lowell, 4-19 158 137 Rehoboth, . 3-66 272 89 Lancaster, . 4-18 137 138 Fall River, . 3-65 74 90 Orange, . 4-17 96 139 Foxborough, . 3-65 106 91 Clinton, . 4-14 121 140 Manchester, . 3-65 106 91 Clinton, . 4-13 146 141 Chatham, . 3-63 122 93 Montague, . 4-12 119 142 Lenox, . 3-63 122 93 Montague, . 4-09 168 143 Canton, . 3-62 110 95 Lawrence, . 4-09 123 144 Sunderland, . 3-62 110 95 Lawrence, . 4-09 149 145 Hanover, . 3-61 81 97 Townsend, . 4-06 131 147 Medford, . 3-69 108 98 Deerfield, . 4-06 131 147 Medford, . 3-69 108 98 Deerfield, . 4-06 131 147 Medford, . 3-59 100 Arlington, . 4-04 89 149 Conway, . 3-55 101 Douglas, . 4-01 54 152 Barnstable, . 3-54 128 104 Holliston, . 3-99 169 153 Easthampton, . 3-53 128 104 Holliston, . 3-99 173 154 Leverett, . 3-51 172 106 Berkley, . 3-97 126 155 Northfield, . 3-51 173 108 Oxford, . 3-96 161 157 Wenham, . 3-63 109 Rockport, . 3-96 140 159 Huntington, . 3-42 110 Wendell, . 3-96 140 159 Huntington, . 3-42 111 Dedham, . 3-94 283 161 Mt Washington, . 3-42				4-81	105	128	Swampscott, .	3-80
67 82 Dennis,					138	129	Upton,	<b>-8-77</b>
84         83         Prescott,								
77 84 Truro,								
68         85         Wakefield,         4-22         115         134         Southampton,         3-63           114         86         Athol,         4-21         116         185         Gt. Barrington,         3-67           71         87         Gardner,         4-20         154         136         Spencer,         3-67           79         88         Lowell,         4-19         158         137         Rehoboth,         3-67           79         88         Lowell,         4-19         158         137         Rehoboth,         3-65           74         90         Orange,         4-17         96         139         Foxborough,         3-65           106         91         Clinton,         4-14         121         140         Manchester,         3-65           158         92         Dana,         4-13         146         141         Chatham,         3-65           75         94         Granby,         4-09         168         143         Canton,         3-62           110         95         Lawrence,         4-09         149         145         Hanover,         3-61           34         96 <t< td=""><th></th><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
114         86         Athol,         .         4-21         116         135         Gt. Barrington,         3-67           71         87         Gardner,         .         4-20         154         136         Spencer,         .         3-67           79         88         Lowell,         .         4-19         158         137         Rehoboth,         .         3-67           79         89         Lancaster,         4-18         137         188         Fall River,         .         3-65           74         90         Orange,         4-17         96         139         Foxborough,         3-65           106         91         Clinton,         4-14         121         140         Manchester,         3-65           158         92         Dana,         4-12         119         142         Lenox,         3-63           158         92         Montague,         4-12         119         142         Lenox,         3-63           158         92         Granby,         4-09         168         143         Canton,         3-63           100         95         Lawrence,         4-09         123         144								
71 87 Gardner,							Southampton, .	
79 88 Lowell,							Gt. Barrington,	
272         89         Lancaster,         4-18         137         138         Fall River,         3-65           74         90         Orange,         4-17         96         139         Foxborough,         3-65           106         91         Clinton,         4-14         121         140         Manchester,         3-65           158         92         Dana,         4-13         146         141         Chatham,         3-65           158         92         Dana,         4-12         119         142         Lenox,         3-65           122         93         Montague,         4-12         119         142         Lenox,         3-63           75         94         Granby,         4-09         168         143         Canton,         3-62           110         95         Lawrence,         4-09         123         144         Sunderland,         3-62           34         96         Oakham,         4-09         149         145         Hanover,         3-61           108         98         Deerfield,         4-06         131         147         Medford,         8-59           247         99         Ot			T 11					
74         90         Orange,         .         4-17         96         139         Foxborough,         .         3-65           106         91         Clinton,         .         4-14         121         140         Manchester,         .         3-65           158         92         Dana,         .         4-13         146         141         Chatham,         .         3-63           122         93         Montague,         .         4-12         119         142         Lenox,         .         3-63           110         95         Lawrence,         .         4-09         168         143         Canton,         .         3-62           110         95         Lawrence,         .         4-09         123         144         Sunderland,         .         3-62           34         96         Oakham,         .         4-09         149         145         Hanover,         .         3-61           108         98         Deerfield,         .         4-06         131         147         Medford,         .         8-57           247         99         Otis,         .         .         4-06         26								
106         91         Clinton,								
158 92 Dana,							Manahastan	
122       93       Montague,       4-12       119       142       Lenox,       3-63         75       94       Granby,       4-09       168       143       Canton,       3-62         110       95       Lawrence,       4-09       123       144       Sunderland,       3-62         34       96       Oakham,       4-09       149       145       Hanover,       3-61         81       97       Townsend,       4-07       198       146       N. Marlboro',       3-60         108       98       Deerfield,       4-06       26       148       Beverly,       3-59         247       99       Otis,       4-06       26       148       Beverly,       3-59         59       100       Arlington,       4-04       89       149       Conway,       3-55         66       101       Douglas,       4-02       152       150       Taunton,       3-55         70       102       Brookfield,       4-01       220       151       Andover,       3-54         189       103       Lexington,       4-01       54       152       Barnstable,       3-53         128 </td <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
75 94 Granby								
110       95       Lawrence,       4-09       123       144       Sunderland,       3-62         34       96       Oakham,       4-09       149       145       Hanover,       3-61         81       97       Townsend,       4-07       198       146       N. Marlboro',       3-60         108       98       Deerfield,       4-06       131       147       Medford,       3-59         247       99       Otis,       4-06       26       148       Beverly,       3-67         59       100       Arlington,       4-04       89       149       Conway,       3-55         66       101       Douglas,       4-02       152       150       Taunton,       8-55         70       102       Brookfield,       4-01       220       151       Andover,       8-54         189       103       Lexington,       4-01       54       152       Barnstable,       8-53         128       104       Holliston,       3-99       169       153       Easthampton,       8-53         167       105       Palmer,       3-99       178       154       Leverett,       8-51			Granby.					
34         96         Oakham, .         4-09         149         145         Hanover, .         3-61           81         97         Townsend, .         4-07         198         146         N. Marlboro', .         8-60           108         98         Deerfield, .         4-06         131         147         Medford, .         8-59           247         99         Otis, .         4-06         26         148         Beverly, .         8-57           59         100         Arlington, .         4-04         89         149         Conway, .         8-55           66         101         Douglas, .         4-02         152         150         Taunton, .         8-55           70         102         Brookfield, .         4-01         220         151         Andover, .         8-54           139         103         Lexington, .         4-01         54         152         Barnstable, .         3-53           129         104         Holliston, .         3-99         169         153         Easthampton, .         3-53           167         105         Palmer, .         3-99         173         154         Leverett, .         3-51 <tr< td=""><th></th><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>								
81       97       Townsend,       4.07       198       146       N. Marlboro',       8-60         108       98       Deerfield,       4-06       131       147       Medford,       8-59         247       99       Otis,       4-06       26       148       Beverly,       8-59         59       100       Arlington,       4-04       89       149       Conway,       8-55         66       101       Douglas,       4-02       152       150       Taunton,       8-55         70       102       Brookfield,       4-01       220       151       Andover,       8-54         189       103       Lexington,       4-01       54       152       Barnstable,       3-53         128       104       Holliston,       8-99       169       153       Easthampton,       8-51         172       106       Berkley,       3-99       178       154       Leverett,       8-51         172       106       Berkley,       3-97       126       155       Northfield,       8-51         184       107       Walpole,       3-97       135       156       Cummington,       3-50								
108         98         Deerfield,         .         4-06         131         147         Medford,         .         8-59           247         99         Otis,         .         4-06         26         148         Beverly,         .         3-57           59         100         Arlington,         .         4-04         89         149         Conway,         .         3-55           66         101         Douglas,         .         4-02         152         150         Taunton,         .         8-55           70         102         Brookfield,         .         4-01         220         151         Andover,         .         8-54           139         103         Lexington,         .         4-01         54         152         Barnstable,         .         8-53           128         104         Holliston,         .         8-99         169         153         Easthampton,         .         8-53           167         105         Palmer,         .         3-99         173         154         Leverett,         .         8-51           172         106         Berkley,         .         3-97         126	81	97		4 07	198	146		8-60
247       99       Otis,       .       4-06       26       148       Beverly,       .       8-67         59       100       Arlington,       .       4-04       89       149       Conway,       .       8-55         66       101       Douglas,       .       4-02       152       150       Taunton,       .       8-55         70       102       Brookfield,       .       4-01       220       151       Andover,       .       8-54         189       103       Lexington,       .       4-01       52       Barnstable,       .       8-53         128       104       Holliston,       .       8-99       169       153       Easthampton,       .       8-53         167       105       Palmer,       .       3-99       173       154       Leverett,       .       8-51         172       106       Berkley,       .       3-97       126       155       Northfield,       .       8-51         184       107       Walpole,       .       3-96       161       157       Wenham,       .       3-45         90       109       Rockport,       .		98		4-06	131	147	Medford,	8-59
66       101       Douglas,		99	Otis,	4-06	26			8 - 57
70 102 Brookfield, . 4-01 220 151 Andover, . 8-54 139 103 Lexington, . 4-01 54 152 Barnstable, . 8-53 128 104 Holliston, . 8-99 169 153 Easthampton, . 8-58 167 105 Palmer, 3-99 178 154 Leverett, . 8-51 172 106 Berkley, 8-97 126 155 Northfield, . 8-51 184 107 Walpole, 8-97 135 156 Cummington, . 3-50 91 108 Oxford, 8-96 161 157 Wenham, . 3-45 80 109 Rockport, . 3-96 264 158 Winthrop, . 3-45 90 110 Wendell, . 3-96 140 159 Huntington, . 3-42 117 111 Dedham, . 8-95 179 160 Lee, 8-42 93 112 Orleans, . 3-94 283 161 Mt Washington, 3-42			Arlington, .		1		Conway,	
189     103     Lexington,     .     4-01     54     152     Barnstable,     .     3-53       128     104     Holliston,     .     3-99     169     153     Easthampton,     .     8-53       167     105     Palmer,     .     3-99     173     154     Leverett,     .     8-51       172     106     Berkley,     .     3-97     126     155     Northfield,     .     3-51       184     107     Walpole,     .     3-97     135     156     Cummington,     .     3-50       91     108     Oxford,     .     3-96     161     157     Wenham,     .     3-45       90     110     Rockport,     .     3-96     264     158     Winthrop,     .     3-45       90     110     Wendell,     .     3-96     140     159     Huntington,     .     3-42       177     111     Dedham,     .     3-95     179     160     Lee,     .     .     8-42       93     112     Orleans,     .     3-94     283     161     Mt Washington,     3-42				1				
128       104       Holliston,       .       3-99       169       153       Easthampton,       .       3-53         167       105       Palmer,       .       3-99       173       154       Leverett,       .       8-51         172       106       Berkley,       .       3-97       126       155       Northfield,       .       8-51         184       107       Walpole,       .       8-97       135       156       Cummington,       .       3-50         91       108       Oxford,       .       8-96       161       157       Wenham,       .       3-45         90       110       Wendell,       .       3-96       264       158       Winthrop,       .       8-45         90       110       Wendell,       .       3-96       140       159       Huntington,       .       3-42         17       111       Dedham,       .       3-95       179       160       Lee,       .       .       8-42         93       112       Orleans,       .       3-94       283       161       Mt Washington,       3-42				7				
167       105       Palmer,       .       3-99       178       154       Leverett,       .       3-51         172       106       Berkley,       .       3-97       126       155       Northfield,       .       3-51         184       107       Walpole,       .       3-97       135       156       Cummington,       .       3-50         91       108       Oxford,       .       3-96       161       157       Wenham,       .       3-45         80       109       Rockport,       .       3-96       264       158       Winthrop,       .       8-45         90       110       Wendell,       .       3-96       140       159       Huntington,       .       3-42         17       111       Dedham,       .       3-95       179       160       Lee,       .       .       8-42         93       112       Orleans,       .       3-94       283       161       Mt Washington,       3-42				1				
172     106     Berkley,     .     8-97     126     155     Northfield,     .     8-51       184     107     Walpole,     .     8-97     135     156     Cummington,     .     3-50       91     108     Oxford,     .     8-96     161     157     Wenham,     .     3-45       80     109     Rockport,     .     3-96     264     158     Winthrop,     .     8-45       90     110     Wendell,     .     3-96     140     159     Huntington,     .     3-42       17     111     Dedham,     .     3-95     179     160     Lee,     .     .     8-42       93     112     Orleans,     .     3-94     283     161     Mt Washington,     3-42			Holliston,					
184     107     Walpole,     .     8-97       135       156     Cummington,     .     3-50       91     108     Oxford,     .     8-96       161       157     Wenham,     .     3-45       80     109     Rockport,     .     3-96       264       158     Winthrop,     .     8-45       90     110     Wendell,     .     3-96       140       159     Huntington,     .     3-42       17     111     Dedham,     .     3-95       179       160       Lee,     .     .     3-42       93     112     Orleans,     .     3-94       283       161     Mt Washington,     3-42			Palmer,	1		,		
91       108       Oxford,       .       8-96       161       157       Wenham,       .       3-45         80       109       Rockport,       .       3-96       264       158       Winthrop,       .       8-45         90       110       Wendell,       .       3-96       140       159       Huntington,       .       8-42         117       111       Dedham,       .       3-95       179       160       Lee,       .       8-42         93       112       Orleans,       .       3-94       283       161       Mt Washington,       8-42			Berkley,					
80       109       Rockport,       .       3-96       264       158       Winthrop,       .       3-45         90       110       Wendell,       .       3-96       140       159       Huntington,       .       3-42         117       111       Dedham,       .       3-95       179       160       Lee,       .       8-42         93       112       Orleans,       .       3-94       283       161       Mt Washington,       3-42								
90     110     Wendell,     .     3-96     140     159     Huntington,     .     8-42       117     111     Dedham,     .     8-95     179     160     Lee,     .     8-42       93     112     Orleans,     .     3-94     283     161     Mt Washington,     3-42								
117   111   Dedham,   8-95   179   160   Lee,   8-42   93   112   Orleans,   8-94   283   161   Mt Washington,   8-42								
93   112   Orleans,   3-94   283   161   Mt Washington,   3-42								
							Mt Washington	
				11				
1 1 1 1								- <b></b>

For 1868-70.	For 1870-71.	TOWNS.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredthe of mills.	For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valu- ation appropriated to Public Schools— equivalent to milla and hundredths of
148	163	Leominster, .	8 003-41	120	212	Wrentham, .	8 002-99
196	164	Cohasset,	3-40	209	213	Saugus,	2-98
133	165	Scituate,	8-40	241	214	Groveland, .	2-97
176	166	Blackstone, .	8-38	178	215	Lakeville, .	2-96
145	167	Hubbardston, .	3-37	200	216	Shirley,	2-96
194	168	Northborough, .	8-84	199	217	Plympton, .	2-95
282	169	Easton,	8-81	240	218	Stockbridge, .	2-94
165	170	Charlton, .	8-80	205	219	Plainfield, .	2-93
174 183	171 172	Monroe,	8-80 3-29	182 310	220 221	Leicester, .	2-92 2-92
160	178	Nahant, Middleborough,	8-28	271	222	Somerset, . Wilbraham, .	2-82
170	174	North Andover,	3-28	281	223	New Braintree,	2-84
230	175	Charlemont,	8-27	217	224	Weston,	2-84
156	176	Goshen	8-27	214	225	Ipswich,	2-83
157	177	Hanson,	8-27	229	226	Acton	2-82
311	178	W. Stockbridge,	3-26	284	227	Halifax,	2-82
168	179	Dighton,	3-22	226	228	Hardwick, .	2-82
193	180	Lunenburg, .	8-21	216	229	Middlefield, .	2-82
212	181	Mansfield, .	8-21	147	230	West Roxbury,	2-82
164	182	Tisbury,	8-21	208	231	Bedford,	2-80
150	183	Uxbridge, .	8-21	289	232	Lincoln,	2-80
210	184	Concord,	8-19	219	233	Peru,	2-79 2-78
171 184	185 186	W.Bridgewater,	8-17 8-16	221   185	234 235	Yarmouth, .	2-76
191	187	Holden, Boxborough, .	8-15	223	236	Petersham, . Washington, .	2-76
189	188	Revere,	8-14	282	287	Williamsburg,	2-76
177	189	Coleraine, .	3-13	151	238	Wales,	2-75
166	190	Newburyport, .	3-13	224	239	Essex.	2-74
259	191	Hinsdale, .	3-12	225	240	Monterey, .	2-74
203	192	Pembroke, .	8-12	253	241	Swansea,	2-73
181	193	Phillipston, .	3-12	254	242	Dover,	2-72
265	194	Ashfield,	8-11	195	243	Hingham, .	2 71
213	195	Buckland, .	8-10	267	244	Dracut, .	2-70
211	196	West Newbury,	8-10	250	245	Burlington, .	2-69
144 201	197	Fairhaven, .	8-09 3-09	273 233	246 247	Littleton, .	2-69 2-66
201 227	198 199	Westport,	3-08	234	248	Marshfield, .	2-09
222	200	Longuneadow, . Rutland,	8-07	285	249	Paxton, Chesterfield, .	2-68
218	201	Sutton,	8-07	251	250	Charling	2-67
197	202	Salem,	8-06	293	251	Sudham.	2-66
186	203	Acushnet, .	3-05	111	252	Ludlow,	2-64
268	204	Holland,	8-05	242	253	Windsor, .	2-64
188	205	Monson,	8-04	266	254	New Bedford, .	2-63
143	206	Pittsfield, .	8-04	256	255	Westford,	2-62
261	207	Salisbury, .	8-04	142	256	Stow,	2-61
290	208	Shelburne, .	8-04	245	257	Hadley,	2-58
180	209	Wayland, .	8.04	249	258	Harvard,	2-57
805	210	Lanesborough,.	8-03	246	259	Boylston,	2-56
190	211	Tyngsborough,	8-02	252	260	Sturbridge, .	2-54

For 1869-79.	For 1870-71.	TOWNS.	Percentage of Valuation appropriated to Public Schoolsedulvalent to mills and hundredths of mills.	For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valuation appropriated to Public Schoolsequivalent to mills and hundredths of mills
295	261	Tewksbury, .	8 002-54	820	301	Egremont, .	<b>8</b> 002-11
207	262	Shrewsbury, .	2-53	297	302	Royalston, .	2-11
258	268	Brewster, .	2-50	299	803	Hamilton, .	2-08
255	264	Brimfield, .	2-50	278	804	Blandford, .	2-07
257	265	Berlin,	2-49	808	805	Dunstable, .	2-05
236	266	Mendon,	2-47	263	806	Boxford,	1-99
808	267	Enfield,	2-46	260	307	Duxbury, .	1-99
237	268	Sharon	2-45	307	308	Lynnfield.	1-98
279	269	Worthington, .	2-44	809	309	Medfield.	1-96
300	270	North Reading,	2 42	822	310	Whately,.	1-95
269	271	Seekonk	2-42	324	811	Chelmsford, .	1-94
802	272	Carlisle,	2-40	270	812	Edgartown, .	1-93
<b>28</b> 0	273	Billerica,	2-39	817	813	Wilmington, .	1-91
175	274	Carver,	2-39	313	314	New Ashford, .	1-89
<b>3</b> 06	275	Auburn,	2-38	275	815	Bolton,	1-88
248	276	South Scituate,	2-38	825	316	Raynham, .	1-68
274	277	Norton,	2-87	319	317	W. Brookfield,	1-87
202	278	Ashby,	2-36	812	318	Dartmouth, .	1-85
285	279	Brookline, .	2-35	281	319	Sterling,	1-84
206	280	Rowley,	2-35	314	320	Newbury, .	1-82
276	281	Milton,	2-34	815	321	Gill,	1-79
277	282	Tyringham, .	2-34	328	322	Belmont,	1-75
204	283	Savoy,	2-33	318	823	Hatfield,	1-73
238	284	Hull,	2-32	823	824	Pepperell, .	1-67
287	285	Kingston, .	2 30	262	825		1-64
<b>8</b> 01	286	Sherborn, .	2-30	826	326	Richmond, .	1-59
304	287	Dalton,	2-27	327	327	Chilmark, .	1-57
292	288	Princeton, .	2-27	331	328	Bernardston,	1-55
298	289	Agawam,	2-26	829	829	Hancock,	1-43
294	290	Barre,	2-25	833	880	Gosnold,	1-10
286	291	Mattapoisett, .	2-22	382	-	Alford,	0.95
289	292	Rochester, .	2-19	12	-	Chelsea,* .	-
296	293	Boston,	2-18	1		Ayer,†	-
291	294	Falmouth,	2-18			Everett,†.	_
215 <b>33</b> 0	295	Marion,	2 18	1		Gay Head,†	_
816	296	Topsfield,	2-18 2-15		1	Hudson,†	-
248	297 298	Leyden,	2-15		1	Hyde Park,† .	-
240 288	298	Freetown, . Sandisfield	2-12	1	l	Mashpee,†	_
<b>3</b> 21	300	Tolland.	2-12		1	Maynard,† Norfolk,†	-
<b>5</b> 21	300	TOHBIIU,	2-12		l	Nortolk,7.	_
	<u> </u>	· ·	1	١.	1	1	1

<sup>•</sup> Chelsea made no returns in 1871.

<sup>†</sup> New towns—separate valuation not given.

#### GRADUATED TABLES-SECOND SERIES.

#### [COUNTY TABLES.]

In which all the Towns in the respective Counties in the State are numerically arranged, according to the percentage of their taxable property, appropriated for the support of Public Schools, for the year 1870-71.

# BARNSTABLE COUNTY.

For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valuation ation appropriated to Public Schoolsequivalent to milis and hundredths of milis.	For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valuation and percentage of Valuation Public Methods equivalent to mills and hundredths of mills.
1 2 6 8 4 5 7	1 2 8 4 5 6 7	WELLFLEET, Eastham, Provincetown, Harwich, Dennis, Truro, Orleans, .	\$.007-14 4-55 4-44 4-39 4-23 4-22 3-94	9 10 3 11 12 13	8 9 10 11 12 13 14	Sandwich, Chatham, Barnstable, Yarmouth, Brewster, Falmouth, Mashpee,	\$.003-81 3-63 \$-55 2-78 2-50 2-18

#### BERKSHIRE COUNTY.

2 1 18 3 17 4 5 6 7 10 9 22 26 20 8 25	1 2 8 4 5 6 7 8 9 10 11 12 13 14 15 16	ADAMS, Florida, Otia, Williamstown, Sheffield, Becket, Clarksburg, Gt. Barrington, Lenox, N. Marlborough, Lee, Mt. Washington, W. Stockbridge, Hinsdale, Pittsfield, Lanesborough,	8-42 3-42	15 12 18 14 19 16 21 11 24 23 28 27 29 80 81	17 18 19 20 21 22 28 24 25 26 27 28 29 80 81	Stockbridge, Peru, Washington, Monterey, Cheshire, Windsor, Tyringham, Savoy, Dalton, Sandisfield, Egremont, New Ashford, Richmond, Hancock, Alford,	2-002-94 2-76 2-76 2-64 2-84 2-84 2-84 2-11 1-86 1-48 0-96
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# BRISTOL COUNTY.

			SIUL		UNI		
For 1888-70.	For 1878-71.	towns.	Percentage of Valuation appropriated to Public Schools—equivalent to milis and hundredths of milis.	For 1889-70.	For 1670-71.	TOWNS.	Percentage of Valu- ation appropriated to Public Schools— equivalent to milis and hundredths of milis.
1 7 5 2 4 11 6 10 8 9	1 2 8 4 5 6 7 8 9 10	ATTLEBORO', Berkley,	8-97 8-66 8-65 8-55 8-31 8-22 8-21	8 17 18 14 15 16 12 19 18	11 12 13 14 15 16 17 18 19	Acushnet, . Somerset, . Swansea, . New Bedford, . Seekonk, . Norton, . Freetown, . Raynham, . Dartmouth, .	\$.003-05 2-92 2-78 2-68 2-42 2-87 2-12 1-88 1-85
		D U	KES (	σου	NTI	Υ.	
1 2 3	1 2 8	TISBURY, Edgartown, Chilmark,	\$ 003-21 1-98 1-57	4 -	4 5	Gosnold, Gay Head, .	\$.001.10 _
		ES	SEX C	ου	NTY	7.	
2 1 8 8 4 10 6 7 14 16 12 9 15 11 13 26	1 2 8 4 5 6 7 8 9 10 11 12 13 14 15 16 17	GLOUCESTER, Haverhill, Lynn, Bradford, Marblehead, Georgetown, Peabody, Danvers, Methuen, Middleton, Lawrence, Rockport, Amesbury, Swampscott, Manchester, Beverly, Andover,	\$.006-48 5-91 5-41 5-40 5-16 5-18 4-97 4-42 4-41 4-88 4-09 3-93 8-80 8-85 8-57 8-54	17 20 19 18 24 21 29 28 25 27 22 84 81 80 82 83	18 19 20 21 22 28 24 25 26 27 28 29 80 81 82 83 34	Wenham, Nahant, North Andover, Newburyport, West Newbury, Salem, Salisbury, Saugus, Groveland, Ipswich, Essex, Rowley, Topsfield, Hamilton, Boxford, Lynnfield, Newbury,	\$.003-45 8-29 \$-28 \$-13 \$-10 \$-06 \$-04 2-98 2-97 2-88 2-74 2-35 2-18 2-08 1-99 1-98 1-82
		FRA	NKLIN	СО	UN	TY.	
2 3 18	1 2 8	ERVING, . Warwick, . Heath, .	\$.006-08 5-69 5-47	1 5 6	4 5 6	Hawley, Shutesbury, . New Salem, .	\$.004-93 4-56 4-46

# FRANKLIN COUNTY-Continued.

For 1869-76.	For 1676-71.	TOWNS.		Percentage of Valuation appropriated to Public Schoolse equivalent to milk and hundredths of mills.	For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valu- nion appropriated to Public Schools- equivalent to mills and hundredths of mills
	7	Rowe, .		8.004-43	16	17	Monroe, .	8.003-30
4 7	8		٠.	4-17	20	18	Charlemont.	3-27
12	9	Orange, .	•	4-12	17	19	Coleraine,	3-13
12		Montague,	•					8-11
10	10	Deerfield,	•	4-06	21	20	Ashfield, .	
9	11	Wendell,.	•	8-96	19	21	Buckland,	. 3-10
11	12	Greenfield,	•	3-84	22	22	Shelburne,	. 3-04
9 11 13	18	Sunderland,		8-62	24	23	Leyden, .	. 2-15
8	14	Conway,		8-55	25	24	Whately	. 1-95
15	15	Leverett, .		3-51	23	25	Gill.	1-79
14	16	Northfield.		3-51	26	26	Bernardston,	1-55

# HAMPDEN COUNTY.

1 2 5 8 11 4 7 10 9 18	1 2 8 4 5 6 7 8 9 10	HOLYOKE, Chicopee, Westfield, Springfield, Russell, Montgomery, W. Springfield, Chester, Palmer, Granville, Longmeadow, .	\$ 007-25 5-88 5-08 5-06 4-70 4-67 4-55 4-49 8-99 8-71 8-08	17 12 18 8 6 15 20 21 19	12 13 14 15 16 17 18 19 20 21	Holland, . Monson, . Wilbraham, Wales, . Ludlow, . Brimfield, Agawam, . Tolland, . Blandford, Southwick,	\$.003-05 \$-04 2-87 2-75 2-64 2-50 2-26 2-12 2-07 1-64
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# HAMPSHIRE COUNTY.

8     1     WARE,     \$.005-49       1     2     Pelham,     5-06       9     3     Northampton,     5-08       2     4     Westhampton,     4-98       4     5     South Hadley,     4-67       7     6     Belchertown,     4-51       8     7     Amherst,     4-31       6     8     Prescott,     4-22       5     9     Granby,     4-09       10     10     Greenwich,     3-82       11     11     Southampton,     3-68       15     12     Easthampton,     3-53	18	ield, 2-5 lefield, 2-5 lefield, 2-7 erfield, 2-6 ly, 2-5 ld, 2-4 hington, 2-4
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# MIDDLESEX COUNTY.

For 1869-10.	For 1870-71.	Towns.	Percentage of Valu- ation appropriated to Public Schools— equivalent to milis and hundredths of milis.	For 1366-70.	For 1870-71.	Towns.	Percentage of Valuation appropriated to Public Schools—equivalent to milia and hundredths of milia.
1 4 10 6 8 7 9 8 8 15 12 11 1 5 2 20 13 17 21 16 18 19 14 25 22 27 24 28 84	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 27	SOMERVILLE, Stoneham, Natick, Ashland, Marlborough, Winchester, Hopkinton, Newton, Reading, Watertown, Charlestown, Melrose, Malden, Waltham, Brighton, Framingham, Cambridge, Wakefield, Lowell, Townsend, Arlington, Holliston, Woburn, Groton, Medford, Concord.	\$.008-17 6-56 6-46 6-32 6-32 6-18 5-64 5-51 5-41 5-41 5-41 4-70 4-55 4-51 4-70 4-51 4-28 4-22 4-19 4-07 4-04 4-01 3-99 8-87 3-86 8-59 3-19	28 29 31 35 36 33 37 40 38 41 43 42 44 45 47 42 46 48 51 52 50 53	29 30 81 82 83 84 85 86 87 88 89 40 41 42 43 44 45 50 51 52 53 54 55	Wayland, Tyngsborough, Shirley, Weston, Acton, Bedford, Lincoln, Dracut, Burlington, Littleton, Sudbury. Westford, Stow, Tewksbury, North Reading, Carlisle, Billerica, Ashby, Sherborn, Dunstable, Chelmsford, Wilmington, Belmont, Pepperell, Everett, Hudson, Ayer,	\$ 003-04 8-02 2-96 2-84 2-80 2-70 2-69 2-69 2-66 2-62 2-61 2-54 2-42 2-40 2-30 2-30 2-96 1-94 1-75 1-67
30	28	Boxborough, .	8-15 UCKE	- T C	56 O II I	Maynard,	-
		NANTUCKET, .				NTY. 	8.003-71
		NOR	FOLK	Cυ	UNI	ΓY.	
4 1 2 3 5 7 16 11 9 10 8 15	1 2 8 4 5 6 7 8 9 10 11 12	WEYMOUTH, . Needham, . Bellingham, . Stoughton, . Quincy, . Medway, . Walpole, . Dedham, . Franklin, . Braintree, . Foxborough, . Canton, .	\$.005-98 5-56 4-61 4-59 4-58 4-39 3-97 3-95 3-82 3-80 8-65 8-62	18 17 12 14 19 18 21 20 22 28	18 14 15 16 17 18 19 20 21 22 23	Randolph, Cohasset, Wrentham, West Roxbury, Dover, Sharon, Brookline, Milton, Medfield, Hyde Park, Norfolk,	\$.003-42 3 40 2-99 2-82 2-72 2-45 2-85 2 84 1-96

#### PLYMOUTH COUNTY.

TOWNS.			PLXN	40 U T		UUN	TY.					
5         2         Plymouth,	For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valu- ation appropriated to Public Schools- equivalent to mills and hundredths of mills.	For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valu- ation appropriated to Public Mchoolse- equivalent to mile and hundredthe of				
Temperature   Temperature	5 1 2 4 6 8 7 10 9 11 16	2 8 4 5 6 7 8 9 10 11 12	Plymouth, Abington, Wareham, E Bridgewater, Bridgewater, Hanover, Scituate, Middleborough, Hanson, W Bridgewater, Pembroke,	4-61 4-57 4-53 4-31 3-91 3-61 8-40 8-28 8-27 3-17 3-12	22 14 18 12 20 19 24 28 25 17	15 16 17 18 19 20 21 22 23 24	Halifax, Hingham, Marshfield, Carver, South Scituate, Hull, Kingston, Mattapoisett, Rochester, Marion,	\$.002.95 2-82 2-71 2-69 2-39 2-38 2-32 2-30 2-22 2-19 2-18 1-99				
Winthrop,   S-45   4   4   Boston,   2-			SUF	FOLK	со	נאט	Y.					
1       1       WESTBORO',			CHELSEA,* . Winthrop, .					\$.003-14 2-18				
12       3       Fitchburg,       4-95       19       24       Templeton,       3-8         5       4       Worcester,       4-80       32       25       Westminster,       3-8         8       5       Milford,       4-88       32       26       Grafton,       3-8         17       7       N. Brookfield,       4-83       26       28       Upton,       3-8         16       8       Southborough,       4-70       31       29       Spencer,       3-8         6       9       Warren,       4-59       28       30       Leominster,       3-8         7       10       Webster,       4-53       34       31       Blackstone,       3-8         4       11       West Boylston,       4-42       27       32       Hubbardston,       3-8         9       12       Southbridge,       4-36       39       33       Northborough,       3-8         11       13       Millbury,       4-31       33       34       Charlton,       3-8         21       14       Winchendon,       4-30       38       35       Lunenburg,       3-8         24       1		WORCESTER COUNTY.										
80   19   Dana,   4-13   41   40   Sutton, 3-	10 12 5 8 3 17 16 6 7 4 9 11 21 24 15 51 23 80	2 8 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	Fitchburg, Worcester, Milford, Northbridge, N. Brookfield, Southborough, Warren, Webster, West Boylston, Southbridge, Millbury, Winchendon, Athol, Gardner, Lancaster, Clinton, Dana,	6-16 4-95 4-90 4-89 4-88 4-83 4-70 4-59 4-53 4-42 4-36 4-31 4-20 4-18 4-14	18 19 20 82 22 26 31 28 84 27 89 88 38 29 25 42 41	23 24 25 26 27 28 29 30 31 32 33 84 35 36 37 38	Oxford, Templeton, Westminster, Grafton, Ashburnham, Upton, Spencer, Leominster, Blackstone, Hubbardston, Northborough, Charlton, Lunenburg, Uxbridge, Holden, Phillipston, Rutland, Sutton,	\$ 004-01 \$-96 \$-83 \$-83 \$-82 \$-67 \$-41 \$-3 \$-3 \$-3 \$-21 \$-21 \$-10 \$-12 \$-12 \$-12 \$-12 \$-12 \$-12 \$-12 \$-12				

<sup>\*</sup> Return of last year.

<sup>†</sup> Including Roxbury and Dorchester.

# WORCESTER COUNTY-CONTINUED.

For 1869-70.	For 1870-71.	TOWNS.	Percentage of Vain- ation appropriated to Public Schools- equivalent to milis and hundredths of milis	For 1869-70.	For 1870-71.	TOWNS.	Percentage of Valu- ation appropriated to Public Schools- equivalent to mills and hundredths of
43	43	Hardwick,	8.002-82	50	51	Mendon,	8.002-47
43 37	44	Petersham,	2-76	57	52	Auburn,	2-38
45	45	Paxton, .	2-69	54	53	Princeton, .	2-27
48	46	Harvard, .	2-57	55	54	Barre,	2-25
47	47	Boylston, .	2-56	56	55	Royalston, .	2-11
49	48	Sturbridge,	2-54	52	56	Bolton,	1-88
40	49	Shrewsbury,	2-53	58	57	W. Brookfield,	1-87
46	50	Berlin, .	2-49	53	58	Sterling,	1-84

A GRADUATED TABLE - SECOND SEERS.

The different Counties in the State numerically arrianged, according to the Percentage of their Taxable Property, appropriated for the support of Public Schools, for the year 1870-71.

8 8 8 8 8 4 4 8 4 4 8 4 4 8 4 4 8 4 4 8 4 4 8 4 4 8 4 4 8 4 4 8 4 4 8			
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	612,540 26	
	8.008-25 \$8,272,835 88 \$6,240 68 \$8,278,576 01 \$1,009,709,652 00 \$12,540 26	
TATE.	88,278,576 01	: : : :
R THE 8	\$6,240 68	
AGGREGATE FOR THE STATE.	88,272,885 88	
AGGREG	. \$.008-25	-
	•	
	:	
	14 Counties,	ì

# Arrangement of the Counties according to their Appropriations, including Voluntary Contributions.

If the Counties are numerically arranged, according to the percentage of their valuations appropriated for Public Schools, voluntary contributions of board and fuel being added to the sum raised by tax and to the income of the Surplus Revenue, as severally given in the previous Table, the order of precedence will be as follows:—

For 1868-70.	For 1570-71.			cot	JN TI	ES.					Percentage of Val- uation equiva- lent to mills and hundredths of mills.
1	1	HAMPDEN,	•	•		•		•	•	•	<b>\$.004-74</b>
2	2	Middlesex,	•		•		•		•	•	4-43
6	8	Hampshire,				•	•	•	•		4-07
3	4	Essex, .	•	•	•						4-04
5	5	Worcester,		•	•		•	•	•		4-01
4	6	Barnstable,	•	•	•	•			•	•	8-80
7	7	Nantucket,		•							8-72
8	8	Plymouth,		•		•		•	•		8-72
12	9	Norfolk, .		•	•			•			8-71
9	10	Franklin,			•				•		8-67
10	11	Berkshire,							•		3-52
11	12	Bristol, .	•		•		•				8-09
14	18	Suffolk, .							•		2-25
13	14	Dukes, .	•	••	•	•	•	•	•	•	2-28
	Aggr	egate for the S	ate,	•	•	•		•	•		<b>8</b> .008-26

#### GRADUATED TABLES - THIRD SERIES.

The following Table exhibits the ratio of the average attendance for the year in each town to the whole number of children between 5 and 15, according to the returns.

The ratio is expressed in decimals, continued to four figures, the first two of which are separated from the last two by a point, as only the two former are essential to denote the real per cent. Yet the ratios of many towns are so nearly equal, or the difference is so small a fraction, that the first two decimals, with the appropriate mathematical sign appended, indicate no distinction. The continuation of the decimals, therefore, is simply to indicate a priority in cases where, without such continuation, the ratios would appear to be precisely similar.

In several cases the ratio of attendance exhibited in the Table is over 100 per cent. These results, supposing the registers to have been properly kept, and the returns correctly made, are to be thus explained:—the average attendance upon all Public Schools, being compared with the whole number of children in the town between 5 and 15, the result may be over 100 per cent., because the attendance of children under 5 and over 15 may more than compensate for the absence of children between those ages. The rank of the towns standing highest in the following table is in accordance with the returns. As the returns are often incorrect the rank may be too high in some cases.

#### GRADUATED TABLES - THIRD SERIES.

#### [FOR THE STATE.]

Table in which all the Towns in the State are numerically arranged according to the AVERAGE ATTENDANCE of their children upon the Public Schools, for the year 1870-71.

_			-						
	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Batio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals.
1	WELLFLEET,	424	488	1.10-38	84	Kingston, .	289	262	.90-66
2	Sherborn, .	209		1 05-74	35	Phillipston, .	159	144	.90-56
3	Heath,	110		1 05-45	36	Westhampton,	187	124	.90-51
4		69		1.04-35	87	Gay Head.	40	36	.90-00
5	Charlton, .	301		1.03-99	38		820	288	.90-00
6	Brighton, .	847		1 02-95	89	Amherst, .	661	592	.89-56
7	Westminster,	288		1 01-74	40		810	725	.89-51
8	Burlington, .	108		1 00-97	41	Clarksburg,	141	126	.89-36
9	Eastham, .	118		1.00-00	42	Acton,	804	271	.89-14
10		124		1.00-00	43	Leominster, .	607	541	.89-13
11			• 157	.99-37	44	Weston, .	196	174	.88-78
12	Orleans, .	239	237	.99-16	45	Belmont, .	273	242	.88-64
13	Paxton, .	120	119	99-16	46	Framingham,	744	659	.88-57
14		688	672	.97-67	47	Lexington, .	830	292	.88-48
15	Sterling, .	298	291	97-65	48	Reading, .	547	483	.88-30
16	Middleton, .	233	227	.97-42	49	Royalston, .	248	214	.88-07
17	Oakham, .	154	148	.96-10	50	Barre,	426	375	.88-03
18	Upton,	354	336	.94-91	51	Ashburnham,	405	856	.87-90
19		229	217	.94-76	52	Provincetown,	737	647	.87-79
20	Lunenburg, .	208	197	.94-71	53	Belchertown,	450	895	.87-78
21	Sandwich, .	735	695	.94-56	54	Carlisle, .	115	100	.86-96
22	Shutesbury, .	109	103	.94-49	55	Hawley, .	130	118	.86-92
28	Milton,	466	438	.94-00	56		285	246	.86-32
24	Bolton,	176	165	.93-75	57	Brimfield, .	218	188	.86-24
25	Lenox,	276	256	.92-75	58	Princeton, .	237	204	.86-08
26	Peru,	99	91	.91-92	59	Littleton, .	204	175	.85-78
27	Medway, .	600	550	.91-67	60	Greenwich, .	103	88	.85-43
28	Hubbardston,	281	257	91-46	61	Marshfield, .	295	252	.85-42
29	Somerville, .	2,570	2,348	.91-36	62	Holden, .	362	309	.85-36
30	Templeton, .	492	449	.91-26	63	Sturbridge, .	814	268	.85-35
81	Lynnfield, .	124	113	.91-13	64	Haverhill, .	2,166	1,847	.85-27
82		157	143	.91-08	65		148	126	.85-14
83	Waltham, .	1,420	1,291	.90-91	66	Coleraine, .	313	266	.84-98
			<u> </u>						

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals.
67	Wareham, .	625	531	.84-96	115	Gloucester, .	3,116	2,465	.79-11
68	Wilmington,.	151	128	.84-77	116		432	341	.78-93
69	Harvard, .	280	236	.84-30	117	W Sp'ngfield,	431	340	.78-89
70	Leverett, E. Bridgew'r,	146 579	123 487		118	Weymouth, .	1,903		.78-72
71 72	Enfield,	151	127	.84.11 .84-11	119 120	Barnstable, . Hyde Park, .	885 950	696 746	.78-64 .78-53
73	Plainfield, .	94	79	.84-04	121	Leicester, .	460	361	.78-48
74	Melrose, .	642	539	.83-95	122	Ashland, .	394	309	_
75	Huntington, .	224	188	.83-93	123	Dighton, .	296	232	.78-38
76	Chelmsford, .	461	385	83-51	124	Prescott, .	92	72	.78-26
77	Wales,	135	112	82-96	125	Dana,	151	118	.78-15
78 79	Newton, .	2,386 192	1,978 159	82-94 82-81	126		151	118	.78-15 .78-09
80	Marion, . Whately, .	167	138	82-63	127 128	Erving, . Needham, .	105 689	538	
81	Chester, .	241	119	82-57	129	Dalton,	241	188	
82	Georgetown,.	416	342	82-21	180	Deerfield, .	602	469	.77-91
83	Gardner, .	648	532	.82-10	131	Stoughton, .	1,128	878	.77-84
84	Ashby,	200	164	.82-00	132	Malden, .	1,417	1,102	
85	Lakeville, .	205	168	.81-95	133	Easton, .	780	606	.77-70
86	Wenham,	166	136	.81-93	134	Hamilton,	130	101	
87 88	Mattapoisett, . Ashfield, .	276 214	226 174	.81-88 .81-32	135 136	Dunstable, .	85 136	66 105	.77-65 77-21
89	Tyngsboro', .	107	87	.81-31	137	Russell, Charlemont, .	193	149	
90	Sunderland, .	165	134	81-21	138		385	297	.77-14
91	Brookfield, .	433	351		139	Stoneham, .	790	609	
92	Bellingham, .	216	175	.81-02	140	W. Newbury,	431	332	.77-03
93	Otis,	198	160	.80-91	141	Hanover, .	822	248	
94	Conway,	271	219	.80-81	142	Holliston, .	665	512	
95 96	Petersham, Medford,	238 1,117	192 901	.80-67 .80-66	143 144	Edgartown, .	828 655	248	
97	Springfield, .	4,232	3,407	.80-51	145	Nantucket, . Mendon, .	241	503 185	
98	Westfield, .	1,131	910	.80-46	146	Blackstone, .	1.042	799	
99	Carver, .	194	156	.80-41	147	N. Bedford, .	3,777	2,895	
100	Townsend, .	872	299	80-38	148	Woburn, .	1,844	1,412	76-57
101	Hopkinton, .	1,076	864	.80-29	149	W. Boylston,	550	421	
102	W. Roxbury,	1,630	1,306	.80-12	150	N. Reading,	178	136	
103 104	Franklin, . Chilmark, .	507 105	406 84	.80-08 .80-00	151 152	W. B'dgw'ter, Seekonk,	377	288	
105	Athol,	579	463	79-97	153	Worcester, .	182 7,519	189 5,782	
106	Hadley,	426	840	79-81	154	Tisbury, .	315	240	
107	Yarmouth, .	371	296	.79-78	155	S. Hadley, .	583	406	
108	Wendell, .	79	68	.79-75	156	Hudson, .	677	515	.76-07
109	Lincoln, .	148	118	.79-73	157	Chesterfield, .	154	117	.75-97
110	Brookline,	1,103	878	.79-60	158	Dedham, .	1,419		
111 112	Bridgewater,	676 122	538 97	.79-58 70-51	159 160	Rockport, .	817	619	
113	Gill, Rehoboth, .	330	262	.79-51 .79-39	161	Leyden, . Fitchburg, .	115 2,105		
114	Swampscott,.	845	273	.79-13	162	Winchester.	592	1,569	

	TOWNS.	No. of children between 6 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals
163	Bedford, .	162	122	.75-31	211	Roston	48901	33303	.71-93
164	Concord, .	421	817	.75-29	211	Boston, Lowell,	6,437		.71-93
165	Dennis, .	752	566	.75-27	213	Hanson, .	208		.71-63
166	Arlington, .	675	508		214	Duxbury, .	417	298	.71-46
167	Marblehead.	1,445			215	Holland, .	84	60	.71-48
168		834	251	.75-15	216	Westport, .	548	391	.71-85
169	Bernardston,	156	117	.75-00	217	Groton, .	749	584	.71-29
170	Rutland, .	240	180	.75-00	218		181	129	.71-27
171 172	Charlestown, Douglas,	6,081 415	4,557 311	.74-94 .74-91	219 220	Milford, .	2,396 191		.71-20 .71-20
173	Northampton,	1,943	1,456	.74-93	221	Revere, . Plymouth, .	1,142	136 934	.71-20
174	Longmeadow,	267	200	.74-91	222	Worthington,	197	140	.71-07
175	Auburn, .	223	167	.74-89	223	Warren, .	490		71-02
176	Tyringham, .	119	89	74-79	224	Peabody, .	1,440		.70-98
177	Abington, .	2,135	1,596	.74-75	225	Sutton,	534	879	.70-97
178	Manchester, .	298	222	.74-50	226	Winthrop, .	124	88	.70-97
179	Ware,	857	638	.74-45	227	Foxborough,.	543		.70-90
180	N. Braintree,	183	99	.74-43	228	W. Br'kfield,	871	263	.70-89
181 182	Walpole, .	895 264	294	.74-43	229 230	Sudbury, .	879	268	.70-71
183	Brewster, . Stockbridge, .	383	196 284	.74-24 .74-15	231	Wakefield, .	737 1,589	520 1,121	.70-56 .70-55
184	Freetown, .	270	200	.74-07	282	N. B'dgw'ter, Buckland,	899	281	70-48
185	Fairhaven, .	515	881	.78-98	233	Essex,	372	262	.70-43
186	Natick,	1,428	1,053	.78-74	234	Sandisfield, .	290	204	.70-34
187	Scituate, .	467	844	.78-66	235	Northboro', .	283	119	.70-32
188	Plympton, .	170	125	.73-53	236	Hinsdale, .	826	229	.70-25
189	Shirley, .	306	225	.78-53	237	S Scituate, .	291	208	.69-76
190	Northfield, .	380	279	.78-42	288	Truro,	327	228	.69-72
191 192	Wayland, . Boylston, .	287 154	174 118	.73-42 .78-38	289 240	Chatham	95 543	66 377	.69-47 .69-43
198	Manaan	542	897	.73-24	241	Clinton, .	1,069	742	.69-41
194	Swansea.	254	186	.78-23	242	Danvers, .	1,198		69-36
195	Quincy, .	1,536		.72-92	243		862	, ,	.69-34
196	lpswich, .	572	417	.72-90	244	Westboro', .	681	471	.69-16
197	Goshen, .	70	51	.72-86	245		516		.68-99
198		883	279	.72-84	246		237	163	.68-78
199	Orange, .	397	289	.72-79	247	Adams, .	2,159		.68-68
200 201	Boxford, . Middlefield, .	165 172	121 125	.72-73 .72-67	248 249		640 528	439 362	.68-59 .68-56
201	Spencer, .	809	589	.72-56	250	Williamsbu'g, Falmouth,	406		.68-47
<b>2</b> 02	Amesbury, .	958		.72-34	251	Monroe.	41	28	.68-29
204	Cummington,	220	159	.72-27		Saugus,	466		.68-24
205	Beverly, .	1,271	917	.72-15	253	Richmond, .	214		.68-22
206	Methuen, .	527		.72-11	254	Lee,	918		
207	Pembroke, .	276	199	.72-10		Newbury, .	216		.68-06
208	Oxford,	548	895	.72-08		Wrentham,	429		.68-06
209 210	Bradford, . Halifax, .	897   118	286 85	.72-04 .72-03		Mansfield, .	464 299	815 208	.67-90 .67-90
2 10	maillax, .	110	95	.12-05	200	Norton, .	299	200	.07-80
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	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals.		towns.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Batto of attendance the whole No of cl dren between band expressed in dedin
259	Northbridge, .	802	544	.67-88	300	Salisbury, .	742	460	
260	Tewksbury, .	242	164	.67-77	301	Westford, .	368	228	
261	Southboro', .	464	314	.67-67	302	Tolland, .	115	71	.61-74
<b>26</b> 2	Watertown, .	876	591	.67-48	303		5,904		.61-42
263	Wilbraham, .	418	282	.67-46	304	Groveland, .	336	206	
264	Uxbridge, .	648	437	.67-44	305		784		
265		58	89	.67-24	306	Gt Barr'gt'n,	904		
266	Cohasset, .	456	306	.67-11		Hatfield, .	376	280	
267	Grafton, .	945	683	.66-98		Stow,	387	236	
268	Taunton, .	3,471	2,315	.66-70		Berlin,	219	133	
269	Pepperell, .	360	240	.66-67	310		297		
270		248	162	.66-67	311	Somerset,	896	240	
271 272	Cambridge, .	8,086 1,212	5,388 807	.66-63 .66-58	312 313	Florida,	189		60-10
273	Attleboro', .	233	155	.66-52	814	Marlborough,	1,877 412	247	
274	Ludlow, . Becket	330	218	.66-06	315	W. St'kbr'ge, Lanesboro',	316	189	59.81
275	Pelham.	129	85	.65-89	316	New Ashford,	52	31	
276	N. Marlboro',	378	249	.65-87	317	Millbury, .	970	577	
277	Hull	41	27	.65-85	318		222	132	
278		137	90	.65-70	319	Mt Wash'gt'n.	74		• • • • • • • • • • • • • • • • • • • •
279	Montague,	431	283	.65-66	320	Winchendon,	620		
280	Windsor, .	144	94	.65-27	321	Palmer.	776		
281	Montgomery,	69	45	.65-22	322	N. Brookfield,	786		
	Medfield.	221	144	.65-16	323	Acushnet,	236		
283	Billerica, .	355	230	.64-79	1	Rochester, .	188		
284		223	144	.64-57	325		1.386		
285	Sheffield.	486	313	.64-40	326	Southbridge,.	1,161		.55-90
286	Newburyport,	2,452	1,578	.64-36	327	Pittsfield	2,517		55-33
287	Greenfield, .	653	420	.64-32	328	Easthampton,	768	422	.54.85
288	Hancock, .	151	97	.64-24	329		4,846	2,659	.54-67
289	Agawam, .	359	230	.64-07	330		<b>59</b> 8	326	.54-5
290	Washington,.	167	107	.64-07	331	Chicopee,	1,764	953	.5146
291	Canton, .	935	599	.64-06	332	Webster, .	896	484	
292	Dana,	133	85	.63-91	333	Alford,	80	43	.53 (
293	Middleboro', .	990	631	.63-74	334	Salem,	5,340		.49-03
294	Braintree, .	881	555	.63-00	335	Gosnold, .	19	9	47-51
295	Egremont, .	175	110	62-86	336	Blandford, .	224		47-32
296	Williamsto'n,	659	414	.62-82	337	Holyoke, .	1,940	863	4474
297	Shelburne, .	351	220	.62-68	388	Chelsea,*	-		, -
298	Fall River, .	5,827	3,637	.62-41	339	Ayer,† .	-	-	-
299	Rowley, .	214	133	.62-15	340	Maynard,† .	-	-	

<sup>\*</sup> No return.

<sup>†</sup> New towns-returns included in other towns.

#### GRADUATED TABLES - THIRD SERIES.

#### [COUNTY TABLES.]

Table, in which all the Towns in the respective Counties in the State are numerically arranged, according to the average attendance of their children upon the Public Schools, for the year 1870-71.

[For an explanation of the principle on which these Tables are constructed, see ante, p xciv.]

# BARNSTABLE COUNTY.

	TOWNS.	No. of children between 5 and 15 years of age in each town.  Average attendance upon School.  Ratio of attendance to the whole No. of children between 5 and 15, axpressed in decimals.				TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No of chil- dren between 5 and 15, expressed in decimals.	
1	WELLFLEET,	424		1.10-38	8	Barnstable,	885	696	.78-64	
2	Eastham, .	118		1.00-00	9	Dennis,	752	566	.75-27	
8	Orleans, .	239	287	.99-16	10	Brewster,	264	196	.74 - 24	
4	Sandwich, .	735	695	94-56	11	Truro, .	327	228	.69-72	
5	Harwich, .	810	<b>72</b> 5	.89-51	12	Chatham,	543	377	.69-48	
6	Provincet'wn,	787	647	.87-79	13	Falmouth.	406	278	68-47	
7	Yarmouth, .	371	296	.79-78	14	Mashpee,	58	39	.67-24	

#### BERKSHIRE COUNTY.

1 2 3 4 5 6 7 8 9 10 11	Clarksburg, . Otis, . Monterey, . Dalton, . Tyringham, . Stock bridge, . Savoy, . Sandisfield, . Hinsdale, .	276 99 141 198 151 241 119 883 181 290 826	91 126 160 118 188 284 129 204 229 251	.80-91 .78-15 .78-01 .74-79 .74-15 .71-27 .70-34 .70-25 .69-34		Sheffield, Hancock, Washington, Egremont, Williamst'wn, Gt Bar'ngton, Florida, W. St'kbri'ge, Lanesboro', N. Ashford,	378 144 486 151 167 175 659 904 189 412 816 52	94 813 97 107 110 414 553 114 247 189 81	.65-27 .64-40 .64-24 .64-07 .62-86 .62-82 .61-17 .60-32 .59-95 .59-81
11	Hinsdale, . Cheshire, . Adams, Richmond, . Lee,	326	229 251 1,478 146	.70-25 .69-34 .68-68 .68-22	27	Lanesboro', . N. Ashford, . Mt. Wash'gt'n,	816	189	.59-81 .59-61 .59-46

# BRISTOL COUNTY.

_												
	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of sitendance to the whole No. of chil- dren between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 16 years of age in each town.	Average attendance upon Sebool.	Railo of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals.			
1 2 8 4 5 6 7 8 9	BERKLEY, Rehoboth, Dighton, Easton, N. Bedford, Seekonk, Raynham, Freetown, Fairhaven, Swansea,	148 330 296 780 8,777 182 334 270 515 254	126 262 232 606 2,895 139 251 200 381 186	.85-14 .79-39 .78-38 .77-70 .76-65 .76-37 .75-15 .74-07 .73-98 .73-23	11 12 13 14 15 16 17 18 19	Westport, . Dartmouth, . Mansfield, . Norton, . Taunton, . Attleboro', . Fall River, . Somerset, . Acushnet, .	548 640 464 299 3,471 1,212 5,827 896 286	391 439 315 203 2,316 807 3,637 240 136	.71-35 .68-59 .67-90 .67-90 .66-70 .66-58 .62-41 .60-61			
		]	DUK	ES (	o	UNTY.						
1 2 8	GAY HEAD, . Chilmark, . Edgartown, .	40 105 323	36 84 248	.90-00 .80-00 .76-80	5	Tisbury, .	315 19	240 9	.76-19 .47-37			
			ESS	EX (	O	UNTY.						
11 22 83 44 55 66 77 88 99 100 111 122 138 144 155 166 177	ANDOVER, Middleton, Lynnfield, Haverhill, Georgetown, Wenham, Swampscott, Gloucester, Hamilton, W. Newbury, Rockport, Marblehead, Manchester, Ipswich, Boxford, Amesbury, Beverly,	688 233 124 2,166 416 166 8,116 130 481 817 1,445 298 572 165 958	842 136 278	.97-67 .97-42 .91-13 .85-27 .82-21 .81-93 .79-13 .79-11 .77-69 .77-08	18 19 20 21 22 28 24 25 26 27 28 29 80 31 82 83 84	Methuen, Bradford, Peabody, Essex, Nahant, Danvers, N. Andover, Topsfield, Saugus, Newbury, Newbury, Rowley,	527 397 1,440 872 95 1,198 516 236 216 2,452 214 742 5,904 4,846 5,340	1,022 262 66 831 356 163 318 147 1,578 133 460 3,626 2,659	.72-04 .70-98 .70-43 .69-47 .69-36 .68-78 .68-94 .68-96 .64-96 .61-42 .61-31 .54-67			
	<u> </u>	·		·	·		•	•	·			
	FRANKLIN COUNTY.											
1 2	HEATH, . Warwick, .	110 124		1.05-45 1.00-00	3 4	New Salem, . Shutesbury, .	158 109					

#### FRANKLIN COUNTY-Continued.

	TOWNS.		No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No of chil- dren between 5 and 15, expressed in decimals.		TOWNS.	No. ofchildren between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals,
5	Hawley,		130	118	.86-92	16	Charlemont, .	193	149	.77-20
6	Coleraine.	•	813	266	.81-98	17	Leyden, .	115	87	.75-65
7	Leverett,		146	123	.84-25	18	Bernardston,	156	117	.75-00
8	Whately,	•	167	138		19	Northfield.	380	279	.78-42
9	Ashtield,	•	214	174		20		897	289	.72-79
10		•	165	134	81-21	21	Buckland, .	399	281	.70-48
11	Conway,		271	219	.80-81	22	Monroe, .	41	28	.68-29
12	Wendell,	:	79	63	.79-75	23	Rowe,	137		
13	Gill,		122	97	.79-51	24	Montague, .	431	283	
14	Erving,	•	105	82	78-09	25	Greenfield.	653	420	
15	Deerfield,	:	602	469	.77-91	26		351	220	
								1		l

# HAMPDEN COUNTY.

# HAMPSHIRE COUNTY.

# MIDDLESEX COUNTY.

TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 6 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No of chil- dren between band its, expressed in decimals.
SHERBORN, .  Boxborough, .  Boxborough, .  Brighton, .  Burlington, .  Waltham, .  Acton, .  Weston, .  Belmont, .  Framingham, .  Lexington, .  Reading, .  Carlisle, .  Littleton, .  Wilmington, .  Melrose, .  Chelmsford, .  Newton, .  Ashby, .  Medford, .  Tyngsboro', .  Medford, .  Townsend, .  Hopkinton, .  Lincoln, .  Everett, .  Ashland, .  Malden, .	209 847 103 2,570 1,420 304 196 278 744 830 547 115 204 161 2,886 200 107 1,117 372 1,076 148 432 894 1,417	72 872 104	.85-78 .84-77 .83-95 .83-51 .82-94 .82-00 .81.31 .80.66 .80-38 .80-29 .79-73 .78-93 .78-43	288 299 301 312 333 344 355 368 377 489 400 411 424 445 447 455 468 477 489 500 511 522 533 544	Natick,	1,428 306 287 383 6,487 749 379 737	609 512 1,412 186 515 446 122 817 508 4,557 1,058 225 174 279 4,617 534 268 520 164 5,388 230	.76-07 .75-31 .75-26 .75-26 .73-74 .73-74 .73-73 .73-74 .71-73 .70-71 .70-71 .70-76 .67-48 .66-63 .61-96 .60-98
	N A	NTU	CKE	Т	COUNTY			
NANTUCKET,	•	•		•		655	503	.76-90
	N	ORF	OLK	С	OUNTY.			
MILTON, Medway, Bellingham, W. Roxbury, Franklin, Brookline, Weymouth, Hyde Park, Needham,	466 600 216 1,630 507 1,103 1,903 950 689	550 175 1,306 406 878 1,498 746	.91-67 .81-02 .80-12 .80-08 .79-60 .78-72 .78-53	14 15 16 17	Dedham, Walpole, Quincy, Foxborough, Wrentham, Cohasset, Medfield,	895 1,536 548 429 456 221	1,077 5 294 3 1,120 3 385 0 292 5 306	.75-90 .74-43 .72-92 .70-90 .68-06 .67-11 .65-16

#### NORFOLK COUNTY-CONTINUED.

	Dover, Braintree, . Sharon, .	No. of children between 5 and 15 years of age in each town.	Average attendance of 99 99 99 99 99 99 99 99 99 99 99 99 99		22 23	TOWNS.  Norfolk, . Randolph, .	No. of children between Sc. C. 5 and 15 years of age 98 to in each town.	Average attendance C C C upon School.	Ratio of attendance to the whole No. of chil- the whole No. of chil- dren between 5 and 15,				
	PLYMOUTH COUNTY.												
1 2 3 4 5 6 7 8 9 10 11 12 13	KINGSTON, Marshfield, Wareham, E. Bridgew'r, Marion, Lakeville, Mattapoisett, Carver, Bridgewater, Hanover, W. Bridgew'r, Abington, Scituate,	289 295 625 579 192 205 276 676 822 377 2,135 467	262 252 581 487 159 168 226 588 248 288 1,596 344	.81-95	14 15 16 17 18 19 20 21 22 23 24 25	Hanson, .	170 276 118 208 417 1,142 1,589 291 41 990 784 188	125 199 85 149 298 984 1,121 203 27 631 480 108	.73-58 .72-10 .72-03 .71-63 .71-46 .71-18 .70-55 .69-76 .65-85 .63-74 .61-22 .57-45				
		នប	J <b>F F</b>	OLK	C	OUNTY.							
1 2	BOSTON, . Revere, .	46301 191	33303 136	.71-93 .71-20	3 4	Winthrop, . Chelsea,* .	124 -	88 -	.70-97				
		w o	RCE	STE	R	COUNTY.		· · · · · ·					
1 2 8 4 5 6 7 8 9 10 11 12	Sterling, Oakham, Upton, Lunenburg,	301 288 120 298 154 354 208 176 281 492 159 820		1 08-99 1.01-74 .99-16 .97-65 .96-10 .94-91 .94-71 .93-75 .91-46 .91-26 .90-56	17 18 19	Ashburnham,	607 243 426 405 285 237 862 314 280 648 433 238	541 214 375 356 246 204 309 268 236 532 351 192	.89-18 .88-07 .88-03 .87-90 .86-32 .86-08 .85-36 .85-35 .84-30 .82-10 .81-06 .80-67				

<sup>\*</sup> No returns.

# WORCESTER COUNTY-CONTINUED.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratto of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Average attendance upon School.	Ratio of attendance to the whole No of chil: dren between 8 and 18, expressed in decimals.
25	Athol,	579	463	.79-97	42	Warren, .	490	348	.71-02
26	Leicester.	460		.78-48	43		534	379	
27	Dana,	151	118	.78-15	44		871	263	
28	Hardwick, .	385		.77-14	45			199	
29	Mendon, .	241	185		46	Clinton, .	1,069		
30	Blackstone, .	1,042	799	.76-68	47	Westborough,	681	471	.69-16
81	W. Boylston,	550		.76-55	48		802	544	.67-83
32	Worcester, .	7,519	5,762	.76-23	49	Southborough,	464	314	67-67
83	Fitchburg, .	2,105	1,589	.75-49	50	Uxbridge, .	648	437	.67-44
34	Rutland, .	240			51	Grafton, .	945	633	<b>.66-9</b> 8
35	Douglas, .	415			52		219	133	.60-73
36	Auburn, .	223		.74-89	53		970	577	.59-48
37	New Braint'e,	133			54		620	368	.59-35
38	Boylston, .	154			55		786		.58-02
39	Spencer, .	809			56		1,161	649	.55-90
40	Oxford, .	548			57	Dudley, .	598		.54-52
41	Milford, .	2,396	1,706	.71-20	58	Webster, .	896	484	.54-02
				ļ			<u> </u>		

TABLE, in which all the Counties are numerically arranged, according to the AVERAGE ATTENDANCE of their children upon the Public Schools, for the year 1870–71.

For 1868-76.	For 1870-71.			cot	NTI	E8.					Ratio of attendance, &c.
6	1	Barnstable,				•		•			.88-46
9	2	Dukes, .	•			•		•		•	.80-97
1	3	Nantucket,		•		•	•		•		.76-79
4	4	Franklin, .		•	• .						76–15
2	5	Middlesex,	•	•	•	•	•	•	•	•	.75-88
5	6	Plymouth,		•	•			•	•	٠.	.74-85
8	7	Hampshire,	•		•	•	•	•	•	•	.74-82
7	8	Worcester,	•	•	•	•	•	•	•		.74-56
8	9	Norfolk, .				•		•	•		.74-11
10	10	Suffolk, .	•	•	•	•		•	•		.72-80
11	11	Bristol, .			•	•	•	•	•		.68–88
12	12	Hampden,	•	•	•		•	•	•		.68-66
13	18	Essex, .		•			•	•	•		.66-50
14	14	Berkshire,	•	•	•	•	•	•	•	•	.65–68

#### AVERAGE ATTENDANCE FOR THE STATE.

Number of children between	5 and 15 ye	ars of	age	in th	e Sta	te,		278,249
Average attendance,		•	•		•	•	•	201,750
Batio of attendance to the who	le number o	of chile	iren	betw	een 5	and	15	
years of age, expressed in d	ecimals.							.78

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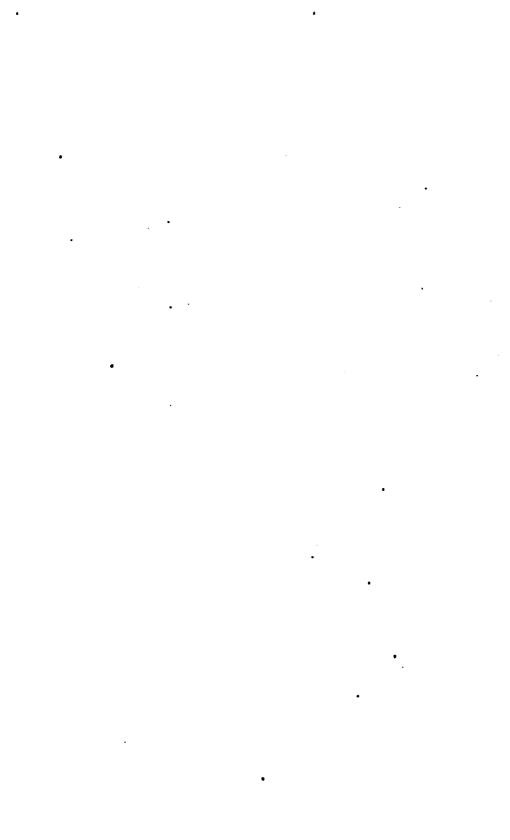
### ABSTRACT OF SCHOOL REPORTS.

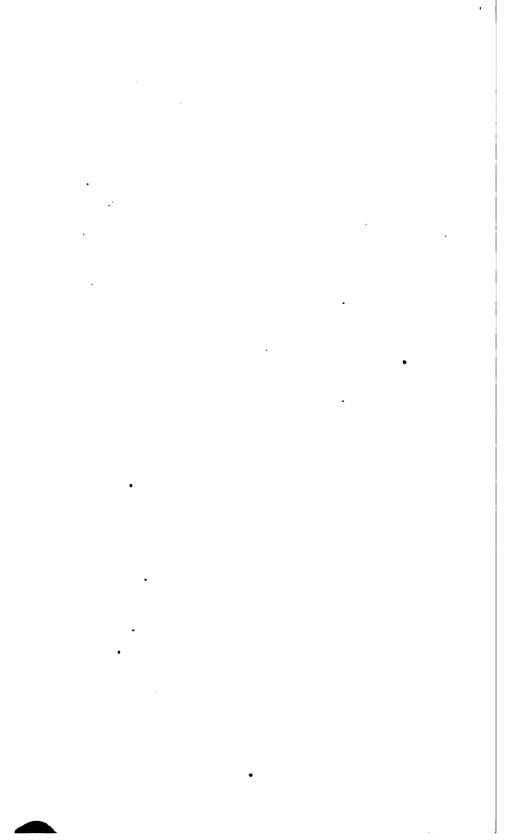
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# REPORT OF THE LIBRARIAN

OF THE

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FOR THE YEAR ENDING

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# Commonwealth of Massachusetts.

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To the Honorable Legislature of Massachusetts.

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Fair Haven, 1870	1
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By Frederick Augustus Fidfaddy. Middletown, 1816	1
Alexander, William. History of Women. Dublin, 1779	2
Allen, Joseph. Genealogical Sketches of the Allen Family of	1
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and British and American Authors. Vol. 2. Philadelphia,	
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American Annual Cyclopædia and Register of Important	
Events of the Year 1870. Vol. 10. New York, 1871	1
American Journal of Insanity. Vol. 27. Utica, 1870-71.	1
American Journal of Science and Arts. 2d Series, Vol. 50;	
3d Series, Vol. 1. New Haven, 1870-71	2
American Law Review. Vol. 5. Boston, 1871	1
American Law Times. Vol. 3. Washington, 1870	1
American Law Times Reports. Vol. 3. Washington, 1870.	1
American Literary Gazette and Publishers' Circular. Vol. 15,	
16. Philadelphia, 1870-71	2
American Naturalist. Vol. 3, 4. Salem, 1870-71.	2
American Remembrancer; or Essays, Resolves, &c., relative	_
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American Whig Review. New York, 1845-52	10
Amos, Sheldon. Difference of Sex as a Topic of Jurisprudence and Legislation. London, 1870	1
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Andrews, Alfred. Genealogy and Ecclesiastical History [of	1
New Britain, Conn.]. Chicago, 1867.	7
Anniversary Calendar, Natal Book, and Universal Mirror.	
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Annuaire de l'économie politique et de la statistique, 1866-70.	_
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Annual Register for 1868-70. London, 1869-71	3
Annual of Scientific Discovery, 1868-71. Boston, 1869-71.	4
Ansell, G. F. The Royal Mint. 3d Ed. London, 1871.	1
Army and Navy Journal. Vol. 7, 8. New York, 1869-71.	2
Arnold, Edwin. The Marquis of Dalhousie's Administration	
of British India. 2 vol. in 1. London, 1862-65	1
Arnott, Neil. Observations on National Education. New	
Ed. London, 1870	1
Ashmead, J. W. Reports of Cases in the Courts of Common	
Pleas, Quarter Sessions, Oyer and Terminer, and Orphans'	
Court of the First Judicial District of Pennsylvania. St.	
Louis, 1871.	1
Atlantic Monthly. Vol. 26, 27. Boston, 1870-71.	2
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Atlantis, The; or Register of Literature and Science of the	
Catholic University of Ireland. February, 1870. London,	1
1870	1
Austro-Hungarian Empire and the Policy of Count Beust.	•
By an Englishman, London 1870	1

	TMES.
Ayckbourn, Hubert. Practice of the High Court of Chancery. 9th Ed. London, 1870	1
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Backus, Isaac. History of New England. With Particular	
Reference to the Baptists. 2d Ed., by David Weston.	
Newton, 1871.	2
Baedeker, Carl. Handbook for Travellers. Northern Italy	
and Corsica. 2d Ed. Coblenz, 1870	1
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duction. London, 1870	2
Bankers' Magazine, and Statistical Register. Vol. 5, 3d Series.	
New York, 1870-71	1
Barclay, D. R. Digest of the Decisions of the Supreme Court	
of Missouri. St. Louis, 1859-68.	2
Bastiat, Frédéric. Harmonies of Political Economy. Trans-	
lated by P. J. Sterling. 2 pt. in 1. London, 1860-70.	1
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Beeton, S. O. Dictionary of Universal Biography. 2d Ed.	
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the United States within the Second Circuit. Vol. 2. New	
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American Civil War. London, 1870	1
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unteers. Portland, 1871	1
Bicknell, T. W. Historical Address and Poem delivered at	•
the Centennial Celebration of the Incorporation of Barring-	
ton, June 17, 1870. Providence, 1870	1
Bigelow, M. M. Reports of Life and Accident Insurance	•
Cases in the American Courts prior to January, 1871. [Vol.	
1.] New York, 1871	1
[Bigg, James.] Standing Orders of the Lords and Commons	-
relative to Private Bills. London, 1870	1
Bingham, Caleb. The American Preceptor. Rutland, 1818.	1
The Columbian Orator. 17th Ed. Boston, 1814.	1
Bird, Robert. Physiological Essays. London, 1870	1
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Blandford, G. F. Insanity and its Treatment. Edinburgh, 1871	1
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Bollaert, William. The Wars of Succession of Portugal and	
Spain, from 1826 to 1840. London, 1870	2
Bolus, Frederic. Synoptical Account of the Great European	
Battles and Sieges from 1700 to 1869. London, 1870.	1
Boston. Orations delivered to commemorate the Evening of	
the Fifth of March, 1770. 2d Ed. Boston, 1807	1
Boston Daily Advertiser. July, 1870—June, 1871. Boston,	
1870–71	2
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Bourdin, M. A. Exposition of the Land Tax. 2d Ed. Lon-	1
don, 1870.	1
Boutwell, G. S. Speeches and Papers relating to the Rebellion and the Overthrow of Slavery. Boston, 1867	1
Braim, T. H. New Homes: the Australian Colonies and	
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Bray, A. E. Revolt of the Protestants of the Cevennes. London, 1870	1
Brentano, Lujo. History and Development of Gilds and the	
Origin of Trade-Unions. London, 1870	1
Brewer, E. C. Dictionary of Phrase and Fable. London,	
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Briffault, F. T. The Prisoner of Ham: the Captivity and	_
Escape of Prince Napoleon Louis. 2d Ed. London, 1870.	1
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of the 37th-40th Meeting, 1867-70. London, 1868-71.	4
Brown, H. S. Lectures to Working Men. London, 1870	1
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Bump, O. F. Law and Practice in Bankruptcy. New York	. 1
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phia, 1853	. 1
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Caillie, Réné. Travels through Central Africa to Timbuctoo Vol. 1. London. 1830	. 1
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Campbell, Robert. The Law of Negligence. London, 1871	
Carlyle, Alexander. Autobiography. Boston, 1861	. 1
Castle, E. J. The Law of Commerce in Time of War. London, 1870.	. 1
Chadwick, John. Christianity versus Paganism. Seven letters	-
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Charlevoix, P. F. X. de. History and General Description o New France. Translated by J. G. Shea. Vol. 5. New	f
York, 1871	. 1
Charnock, R. S. Etymology of Cornish Surnames. London 1870.	, . 1
Chauncy, Charles. Seasonable Thoughts on the State of	-
Religion. Boston, 1743	. 1
sources of Prussia and France. London, 1870	. 1
Cloister Legends. 2d Ed. London, 1871	. 1
Cobden, Richard. Speeches on Questions of Public Policy.	
Edited by John Bright and J. E. T. Rogers. London, 1870	
Colburn, Jeremiah. Bibliography of the Local History of Massachusetts. Boston, 1871.	f . 1
[Coleman, William.] Collection of Facts and Documents relative to the Death of Alexander Hamilton. New York	8
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Connecticut Historical Society. Collections. Vol. 2. Hartford, 1870.	1
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Maine. Commissioner of Fisheries. 4th Report, 1870. Au-	1
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Massachusetts. Railroad Commissioners. Report, 1870.	•
Boston, 1870.	1
Massachusetts Agricultural College. 7th and 8th Annual	_
Reports 1870 71 Roston 1870-71	2

Massachusetts General Association of Congregational	ITS.
Churches. Minutes of the 68th Annual Meeting, Taunton,	
June 21–23. Boston, 1870	1
Massachusetts General Hospital. 57th Annual Report, 1870.	•
Boston, 1871.	1
Massachusetts Institute of Technology. 6th Annual Cata-	•
logue of Officers and Students, 1870-71. Boston, 1870.	
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Minnesota Historical Society. Annual Report, 1870. Saint	_
Paul, 1871	1
Minnesota Hospital for the Insane. 4th Annual Report, 1870.	_
Saint Paul, 1871	1
Mount Auburn Cemetery. Annual Report of the Trustees,	
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Murray's Royal Asylum for Lunatics. Catalogue of the	
Library. Perth. 1863.	1
Regulations and By-Laws, 1827, 58. Perth, 1827-58.	2
Report for the Triennial Period, 1865-68. Perth,	
1868	1
National Conference of Unitarian and other Christian	
Churches. Report of the [1st]-4th Meeting, 1865, 66, 68,	
70. Boston, 1866–70	4
Negri, Cristoforo. Discorso, letto all' assemblea generale ten-	
uta il 30 aprile 1871 nella sala degli arazzi del ministero	
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New Bedford. Free Public Library. 19th Annual Report	
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Newburyport, Mass. Public Library. 15th Annual Report.	_
Newburyport, 1870.	1
New England Female College. 22d Annual Catalogue and	_
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New England Hospital for Women and Children. Annual	_
Report for the Year ending Sept. 30, 1870. Boston, 1870.	1
New England Historic-Genealogical Society. Address of M.	
P. Wilder at the Annual Meeting, Jan. 4, 1871, [with] the	-
Proceedings at that Meeting. Boston, 1871	1
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From March 9th to Dec. 14th, 1870. New York, 1871.	1
- 50th Anniversary Celebration, Nov. 9, 1870.	1
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Constitution, with the Act of Incorporation.	
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Society for the Reformation of Juvenile Delinquents.	
46th Annual Report, 1870. New York, 1871	1
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Parker, Joel. The Law School at Harvard College. New	
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11th and 12th Annual Reports. Philadelphia, 1864-65.	2
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Philadelphia, 1869.	1
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Prisons. 16th Annual Report. Philadelphia, 1870	1
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Protestant Episcopal Church. Abstract of the Records of	
the Trustees of Donations. Boston, 1870	1
Reinsch, Paul. Die Meteorsteine	1
Rhode Island. 17th Report upon the Registration of Births,	
Marriages and Deaths, for the Year 1869. Providence, 1871.	1
Robinson, Charles, Jr. Argument against the Annexation of	
Charlestown, Somerville and Boston, 1871. Charlestown,	_
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Rule, The, in Minot's Case again: as restated with Variations	
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Layman. New York, 1871.	1
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Shippen, William. Sermon preached Oct. 27, 1867, on the	14
Death of W. Shippen. By H. A. Boardman. Philadelphia,	
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Report from the Committee on Military Affairs on the	-
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ington, 1869	1
Bureau of Statistics. Monthly Report. No. 3,	
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——— Department of War. Bureau of Refugees, Freedmen	
and Abandoned Lands. Annual Report of Gen. O. O.	
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Freedmen, July 1, 1870. Washington, 1870	1
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Vermont. Legislative Directory, 1870. Montpelier, 1870.	1

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at its Annual Meeting, Dec. 19, 1870. By O. H. Kile.	
Providence, 1871	1
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Landing of the Pilgrim Fathers at Plymouth, 21st Dec.	
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Worcester, Mass. Free Public Library. 11th Annual Re-	•
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Yale College. Catalogue of the Officers and Students, 1870-	
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Volumes received from Officers of the Government.	
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17th Annual Report of the State Lunatic Hospital at Taun-
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cester, 1870. Boston, 1871
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ton, 1871
Corporation Acts of 1870-71. [Boston, 1871.] 1
Laws relating to the Assessment and Collection of Taxes upon
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Stocks and Bonds held by Massachusetts Corporations, May
1, 1871, as Collateral Security for Borrowed Money or
other Liability. [Boston, 1871.]
Tax Documents, 1871. Boston, 1871. (2 copies.)
Grinnell, C. E. Sermon delivered at the Annual Election,
Jan. 4, 1871. Boston, 1871
Maps.
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Philbrick, Civil Engineer. 1871.
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sion from Gardner to Winchendon. Worcester, 1871.
Surveyed by H. B. Potter
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chendon. Surveyed by H. B. Potter. 1869
—— Profile of a Proposed R. R. from Gardner to Win-
chendon. [1871.]
Brighton. Plan of the Town, 1866. H. M. Wightman 1

Granite Railroad. Plan [and Profile] of the Proposed Exten-	
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Holyoke to Be chertown. Plan of the Proposed Route for	
Railroad. Surveyed by G. R. Nash, Civil Engineer. 1871.	1
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Lancaster to North Leominster. Railroad Route. 1870. A.	_
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Lee and West Stockbridge Rail Road. Plan 2. Welton &	•
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Mill River to the Housatonic R. R. Plan and Profile of a	
Proposed Rail Road. Surveyed by G. W. Butterfield,	_
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Sherborn to Needham. Plan [and Profile] of Proposed Rail-	
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Smith, Engineer, 1871. Weymouth Iron Company's Surveyed by H. Harnden	R	ilroad.	Plan	of th	e Pr	emises.	
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By Purchase,				_			746
By Domestic Exchanges.		•					339
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Number of Maps,		•	,				37
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Books	L	ost or Mi	ssing	7.			
Debates of the Constitutions	al (	Conventio	n, 18	53. <sup>1</sup>	Vol.	l. (D.)	1
Mass. Supreme Court Report							. 1
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Autobiography of Lord Dun	do						. 1
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For the year ending September 30, 1871, there were, for the increase of the library, the following

#### RECEIPTS.

Balance from previous year, Oct. I Annual appropriations, in part for	•	•	25
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Sum received on account, .			00
			<b>\$2,585 25</b>
Expenditu	res.		
Books, pamphlets, periodicals and	maps	<b>. \$</b> 2,148	14
	-	. 214	
Freight of cases of foreign books,	•	. 47	66
Express charges, postage, &c., .	•	. 67	31
		<b>\$2,477</b>	63
Balance to new account, .		. 107	62
			<b> \$2,585 25</b>
Addition	NS.		

Number of volumes added,		•	•	•	•	1,288
Number of pamphlets added,	•			•	•	1,076
Number of mans added.	_	_	_	_	_	87

#### Losses.

The number of books lost annually has been small. Sometimes, volumes charged to members of the legislature or officers of the government are not soon returned, and a few are never recovered. The loss in such cases is through the neglect and forgetfulness of the persons permitted to remove the books, rather than through any remissness of those having charge of the library. In some cases, there is apparently an indifference to the obligation to care for State property and to restore promptly books drawn out, and all suitable efforts to secure their return are unavailing. Losses from this cause are happily unimportant, and generally can be easily repaired. The alcoves are so protected, that few books have been lost by access of visitors and book thieves during the recess of the legislature. Yet

a larger number was clandestinely taken during the last session than in any or all previous years. They were stolen, as there is sufficient reason to believe, by one person, a stranger visiting the library at different times professedly for consultation, and having perhaps a single accomplice. Embracing his opportunity, books were concealed under his garments, when he withdrew quietly to renew his operations on a following day. The number of books taken was twenty-five. rather attractive in binding but not rare or of much cost. Most or all of them were offered for sale at one of our secondhand book-stores, at such low prices as to awaken a suspicion that they had been dishonestly obtained. This suspicion led to inquiry and to a discovery of the depredations while in progress; but indiscreet and unfortunate proceedings defeated all attempts to arrest the criminal. Twelve, or about half of the books have been returned to the library; and it was found, on examination, that every volume had been mutilated by removing library marks and stamps and the title-pages and other leaves, so far as was supposed necessary to destroy all proof of ownership.

This loss, fortunately so unimportant, is the natural result of an undue exposure of the volumes, which, while it ministers to the convenience of some whom it is desirable to favor, is also dangerous to the library. From the beginning, an established rule has allowed members of the legislature an unrestricted access to every alcove, and the use of a key for the purpose. In using this privilege, the alcoves must often remain open not only to the privileged and trustworthy but to others, without its being possible to guard the alcoves sufficiently against the entrance of strangers who are thieves in a gentleman's garb. It is, however, a matter for congratulation that, by constant watchfulness and after a thorough annual inspection, nothing of much value is known to have been clandestinely taken from the library for more than twenty years, notwithstanding the dangers to which it has been exposed.

#### DONATIONS.

A list of donations received during the year is given in the foregoing pages. The donors were Hon. Henry Wilson, Hon. Robert C. Winthrop, Dr. Edward Jarvis, Dr. Samuel A. Greene,

B. G. Northrop, J. N. Genin, Theodore Lyman, Jr., C. A. Morse, J. N. Murphy, J. Smith Homans, J. J. Barclay, Hon. N. B. Shurtleff, C. B. Stuart, Edward McPherson (Clerk U. S. House Rep.), C. D. Bradlee, Charles Cowley, Consul-General of North German Union, Prof. Agassiz, Collins Stone, James Harris, Henry Lee, Jr., Dr. George B. Loring, J. T. Woodward, and Hon. Joel Parker.

#### AGENCY.

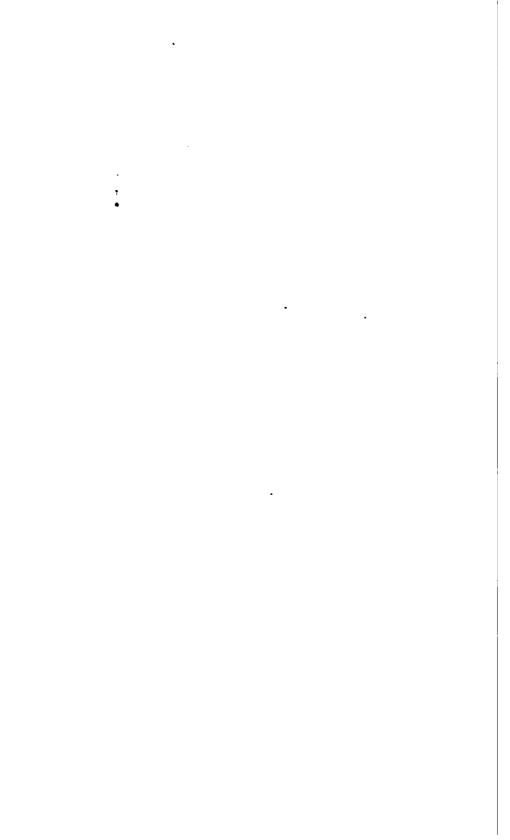
The foreign agency, through the firm of Stevens & Haynes, London, continues to be satisfactory. Through their kind consideration and suggestion, the library has procured during the year a valuable collection of pamphlets belonging to the late Lord Justice Rolt. There were in the series 573, including seven volumes handsomely bound in calf. They are mostly of a legal, judicial and political character, and many are timely and able discussions of subjects of public interest, and illustrative of the spirit and history of the times. The entire cost of the collection to the library was forty-five dollars.

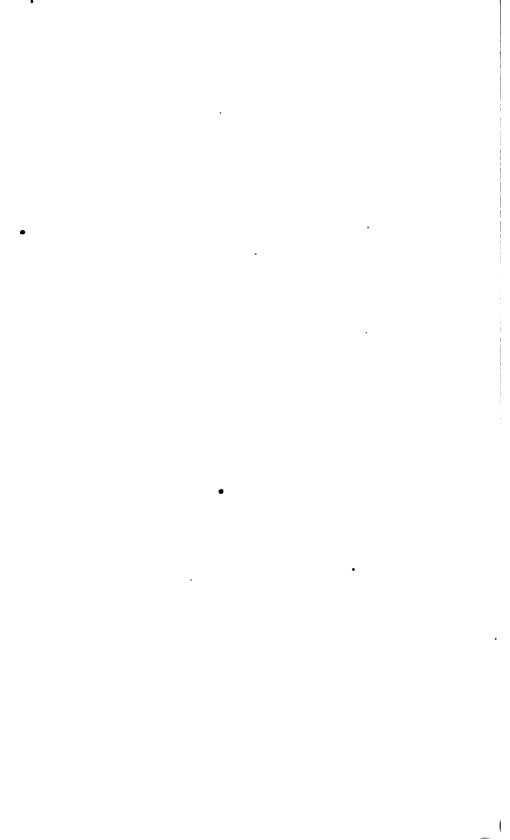
A small additional appropriation is respectfully solicited, to enable the trustees to provide further conveniences, and for other purposes.

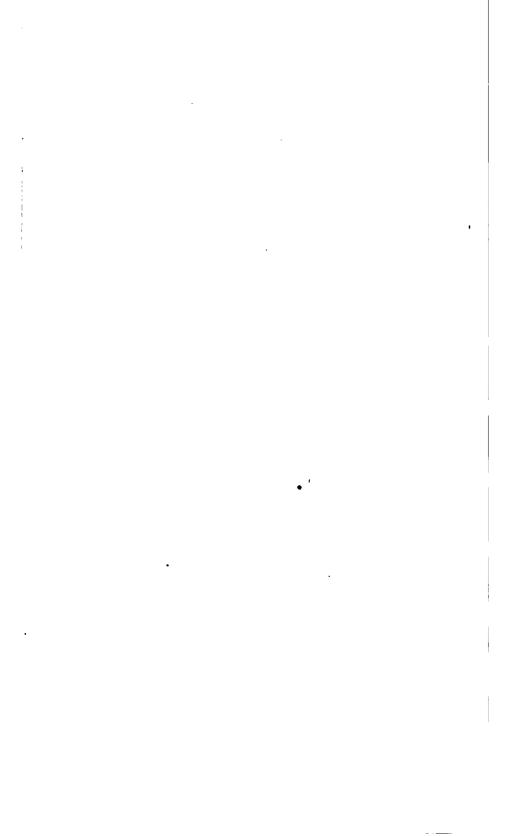
Respectfully submitted.

JOSEPH WHITE, Librarian.

STATE LIBRARY, October 14, 1871.







## NINETEENTH ANNUAL REPORT

OF THE

## SECRETARY

OF THE

# Massachusetts Board of Ägriculture,

## WITH AN APPENDIX

CONTAINING

REPORTS OF DELEGATES APPOINTED TO VISIT
THE COUNTY EXHIBITIONS,

AND ALSO

RETURNS OF THE FINANCES OF THE AGRICULTURAL SOCIETIES.

FOR

1871.

#### BOSTON:

WRIGHT & POTTER, STATE PRINTERS,

No. 79 MILE STREET (CORNER OF FEDERAL).

1872.

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## STATE BOARD OF AGRICULTURE. 1872.

#### MEMBERS EX OFFICIIS.

HIS EXCELLENCY WILLIAM B. WASHBURN. HIS HONOR JOSEPH TUCKER. HON. OLIVER WARNER, Secretary of the Commonwealth. WILLIAM S. CLARK, Pres. Mass. Agricultural College.

# APPOINTED BY THE GOVERNOR AND COUNCIL.

MARSHALL P.	WI	LDE	R of	Bosto	n,	•	•			•		1874
JAMES F. C. H	IYDI	E, of	Ner	oton,			•		•			1875
				`								
		OHO8	KN B	THE	COUN	TY 80	CIET	IES.				
Massachusetts, .				LEVE	CRET	r sai	LTON	ISTA	LL, o	f New	rton,	. 1874
Essex,				GEOF	RGE I	3. LO	RIN	3, of 1	Salem	١, .		. 1875
Middlesex, .				JOHN	1 B. 1	HOOI	RE, of	Cone	cord	•		. 1878
Middlesex North,				JONA	AHT	N LA	DD,	of Lo	well,			. 1874
Middlesex South,				JOS. I	N. ST	URTI	EVAN	T, of	So. F	ramin	gham	, 1875
Worcester, .				O. B.	HAD	WEN	, of	Worce	ester,		•	. 1875
Worcester West,				. THO	SAM:	P. Re	OOT,	of Bo	arre,			. 1875
Worcester North,				EUGI	ENE '	T. M	ILES	of F	itchb	arg,		. 1875
Worcester North-W	øt,			FARV	WELL	F. 1	FAY,	of At	hol,	•		. 1874
Worcester South,	•			. NEW	TON	S H	UBB	ARD,	of B	rimfiel	d,	. 1874
Worcester South-Ea	st,			. WILI	LIAM	KNO	OWL	ron,	of T	pton,		. 1878
Hampshire, Frankli	n and	Han	spden.	A. PI	ERRY	PEC	K, of	Nor	thamp	ton,		. 1878
Hampshire, .				. LEVI	STO	CKB	RIDG	E, of	Amh	erst,		. 1874
Highland,				. JONA	AHT	N M	cELV	VAIN	, of 1	<b>fiddle</b>	field,	. 1875
Hampden,				. WIL	LIAM	BIR	NIE,	of Sp	ringfl	eld,		. 1873
Hampden East, .				. HIRA	M CC	NVE	RSE,	of P	almer	, •		. 1878
Union,				. ENO	S W.	BOIS	E, of	Blane	lford,	•		. 1874
Franklin,				THO	MAS	L. A	LLIS,	of C	onwa	y,		. 1874
Deerfield Valley,				ROGI	er h	. LEA	VIT	Γ, of	Charl	emont	t,	. 1875
Berkshire, .				ANDI	REW	J. B	UCKI	LIN,	of Sou	ath Ad	lams,	. 1878
Hoosac Valley, .				. NAH	UM F	. BR	OWN	, of :	North	Adan	08,	. 1878
Housatonic, .				. RICE	IARD	GOO	DMA	N, of	f Len	ox,		. 1878
Norfolk,				. ELIP	HALI	er s	TONI	E, of 1	Dedh	ım,		. 1874
Hingham,		•		. ALBI	ERT :	FEAF	RING,	of H	ingha	m,		. 1878
Bristol,	•			. AVE	RY P.	SLA	DE,	of Son	nerse			. 1875
Bristol Central,			•	. NAT	HAN	DUR	FEE,	of F	all R	iver,		. 1878
Plymouth, .		•		. CHA	RLES	<b>G</b> . 1	DAVI	8, of	Plyn	outh,		. 1875
Marshfield, .	•		•	. GEO	RGE	м. в	AKE	R, of	Marsh	field,		. 1878
Barnstable, .				. S. B.	PHI	NNE	r, of	Barne	table,			. 1874
Nantucket, .				. AND	REW	M. M	[YRI	CK, o	f Na	atucke	st,	. 1875
Martha's Vineyard,				. HERI	MAN	VIN	CEN 1	r, of	Chile	nark	•	. 1874

CHARLES L. FLINT, Secretary.

Term expires



# NINETEENTH ANNUAL REPORT

OF THE

## SECRETARY

OF THE

# BOARD OF AGRICULTURE.

To the Senate and House of Representatives of the Commonwealth of Massachusetts.

The products of the farm, and, of course, the prosperity of the farmer, are dependent very much upon the characteristics of the season, and especially upon the distribution of warmth and moisture throughout the growing months. Neither the aggregate amount of rainfall, nor the average range of the thermometer, will convey an accurate idea as to whether the conditions are favorable or unfavorable for the growth of plants. It is the general distribution of rain and heat from which we are to judge of the season in its relation to the productive industries of the farm.

Nor is this all. The character of one season has its influence upon the crops of succeeding years. This fact has been quite apparent during the past year, so apparent as to become a subject of common remark among farmers. The severe and almost unprecedented drought of 1870 affected all tillage lands, mowing and pasturage, to an extent rarely observed before. The old fields did not recover, and have not yet recovered, from its effects. But its influence was complicated by another drought, of less severity to be sure, but taken in connection with that of the preceding year, and the open winter interven-

ing, scarcely less disastrous to all forms of plant growth. With the exception of a few localities favored with occasional showers, the hay crop was in consequence diminished to a considerable extent, root crops on the drier lands failed, and the pastures became so short as to compel farmers who had neglected to sow corn for fodder, to resort to their winter stores of hay in the barn. The almost total failure of the apple crop, which may naturally enough be ascribed to other causes than the peculiar nature of the past summer, and partly indeed to the overbearing of the season previous, has contributed to make the year one of uncommon hardship to the farming community.

The most obvious lesson to be derived from the experience of the year is, the importance of deep and thorough cultivation and the frequent stirring of the soil among our cultivated crops. Lands that have been deeply tilled have suffered less from the dry weather than others. Even the old fields that were in a high state of cultivation have suffered less than those that had been allowed to run out. On these lands the hay crop was so slight as, in many instances, to be scarcely worth the expense of gathering. The only thing left in such cases was to plough up and re-seed; this has been done to a greater extent, probably, than in any previous season. This operation involves expense. and is attended with some risks of loss and failure of the seed to take, especially when the supplies of manure are inadequate. Unless the land is already in a high state of fertility from previous cultivation, it is idle to expect a "good catch" without an This is necessary to stimulate the application of manure. young plant to the formation of roots, and to push it forward to a size and strength which will enable it to withstand the obstacles to its growth.

Another equally obvious lesson which the experience of the year teaches is, that the sowing of any grain with our grass seed is detrimental and to be avoided. The low yield of the grass and hay crops may be ascribed very largely to the failure, more of less complete, of newly sown lands. Estimating the loss to the whole State from this source by what is known in a single town where the facts have been gathered with care, and it cannot fall short of half a million dollars. This includes the loss of seed and expense and cost of labor in sowing, or the immediate preparation for it.

The cases are rare where the seeding with grain of any kind will not entail a loss of from twenty to twenty-five per cent. in the quantity and value of the grass crop for some years in succession. This will be the case in more than seven lots in ten, and if, in some instances, the result is satisfactory, it still holds good, as a general rule, that it would have been far more satisfactory had the grass seed been sown alone.

It is clear enough on a moment's reflection that a grain crop of any kind, the oat especially, draws from the soil the nutriment which is essential to the early life and growth of the grass. The result is a feeble and tender root, and an equally weak and sickly stalk. If here and there a delicate plant struggles along till a July sun, when the grain is cut and the shade which has enfeebled its growth is suddenly removed, the chances are that it will quickly yield to its fate and die. But myriads of seeds have done less even than this, and died from want of the food which the grain has robbed them of, almost as soon as they germinated. The loss and waste of grass seed, by this course alone, is perfectly enormous. One would suppose that seed costing from three to five dollars a bushel, like orchard grass and Timothy, or from six to eight dollars, like redtop, would be husbanded with greater care.

Now nothing is more true than that the grass and hay crop is the main stay of our farming. We are greatly dependent upon it. Moreover, it is admitted by the wisest and most experienced farmers among us, that a grass farm and the production of hay is about the most profitable branch of agriculture in this State. Why then, should not our grass seed, for which we pay so much, have an equal chance for life and strength of growth with our other and less expensive seeds? Why should we smother so large a percentage of it out of existence and deprive the remainder of the vitality and vigor which a free growth in the sun and the exclusive use of all the elements of its life and health in our stingy soils alone can give? We are not apt to be so improvident in smaller things; why should we be so in this, that has so important a bearing upon the great staple of our farming industry?

I am prepared both from experience and observation to say and to maintain,—

- 1st. That early fall seeding without grain should be adopted in practice in preference to seeding in spring.
- 2d. That, as a general rule, it is poor economy to take any grain crop either with or immediately preceding the seeding down to grass. That the grass being the ultimate and paying crop, it is bad practice to reduce the land by the draught which a grain crop makes upon it.
- 3d. That wherever from any local reason it becomes desirable to take a crop of spring grain, it is more economical to sow the grain alone in spring, and to plough up the stubble and sow the grass seed alone in the early fall.
- 4th. That in cases where it seems desirable to sow grass seed in spring, it is better to sow it alone and let it take its chance, without compelling it to struggle for existence under the disadvantages of a grain or any other crop.
- 5th. That in seeding down in August or early in September we are following nature as to time, and that, unless the ground is already rich and in high condition, it is necessary to give the seed the benefit of an application of manure on or near the surface to which the seed is applied.
- 6th. That in the selection of seed for mowing lots and hay, we should choose varieties to mix that blossom at or nearly at the same time, and not mix very early and very late varieties together.

These propositions are clear and easily understood. I believe their adoption and application in practice upon every farm in Massachusetts would largely increase the grass and hay crop and materially promote the prosperity of our agriculture.

Among the noticeable features of the year was the visitation of the *Epizoötic Aphtha*, or Foot-and-Mouth Disease, which at the time of my last Report had already appeared at certain points and excited considerable alarm. Fortunately the facts in regard to it soon became known, and prompt action was taken for its suppression. The Report of the Commissioners on Contagious Diseases among Cattle, giving a full account of the introduction and spread of the malady, will be found on page 244, to which reference is respectfully made.

# PUBLIC MEETING OF THE BOARD

#### AT FALL RIVER.

The public meeting of the Board was held in the city of Fall River, on Tuesday, Wednesday and Thursday, November 21, 22 and 23, and was attended by most of the members, as well as by quite a number of the farmers in the vicinity, though the number was not so great as it probably would have been in a more rural neighborhood.

The meeting commenced at twelve o'clock, on Tuesday, in the Music Hall, generously offered by Dr. Durfee for the use of the Board. The Board was called to order by Dr. Durfee, as Chairman of the Committee on Meetings, who delivered the following address.

### Gentlemen of the Board of Agriculture:

I understand it is customary on this our public meeting, for the Chairman of the Committee of Arrangements to call the meeting to order, and in his introductory remarks to refer to such branches of industry, as may be calculated to give interest to the occasion.

I can say, gentlemen, it gives me great pleasure to welcome you, and each of you, to our county, and especially to this our city. I see among you many strong and tried friends of agriculture, those who have been laboring for years to extend a knowledge of this most important science among the yeomanry of the State. And I rejoice to know, that you have not labored in vain, nor spent your strength for naught. You are permitted on this occasion to witness the fruit of your labors, and rejoice to know that Massachusetts among other beneficent institutions, has an Agricultural College, which has already proved an honor to the State.

I might also speak of the many county societies and farmers' clubs, which are diffusing intelligence among the masses. You will expect, however, that on the present occasion I should speak more particularly of my own county,—the county of Bristol.

In respect to the fertility of its soil, it does not compare very favorably with many other counties in the Commonwealth. We have a great variety of soil, capable of a high state of cultivation; but from various causes it has been much neglected, and large tracts of land have been left to run to waste, and have become almost valueless.

From my early knowledge of the habits and pursuits of my ancestry, I can call to mind the indolent and inactive life they pursued. They had no relish for the cultivation of the soil any further than their own immediate wants. The farm of four hundred acres, on which a large portion of this city is built, produced less than what is now produced on many a farm of less than fifty acres. The very grounds on which my residence now stands, at one period in my remembrance, was reputed too poor to raise even white beans, and I have seen on the adjoining land a crop of grass so light that it was difficult to find it when mowed. These same lands have yielded the past year more than three tons of hay to the acre.

For a long series of years, the progress of agricultural science has been very slow, and even now the principal pursuits of our county are manufacturing, whale fishery and the mechanic arts. We have had in the past among us many strong and ardent friends of agriculture,—men who were willing to devote their time and means to promote its interest; but a large majority of the community have been disposed to shun all participation in the cause.

I cannot, however, forget on this occasion, one who was widely known as a strong and persistent friend of agriculture; and perhaps no man in our county did more to inaugurate new measures to advance the interest of the Bristol County Society than this man. I refer to the Hon. J. H. W. Page. He was truly my friend. It was mainly through his influence, that I was first led to take an interest, and finally to become identified with the management of the society.

At the time I became acquainted with the society (there being at that time only one society, the Bristol County), we had no fixed location, although for the most of the time our annual gatherings were held in Taunton.

In 1854, the Horticultural Society of New Bedford gave our society a cordial invitation to meet with them, engaging on

their part to use their influence to promote the interest of the fair, at the same time our society was to receive the entire proceeds. The union of horticulture with agriculture gave a new impulse to the society, and the exhibition proved very successful in creating a new interest, as well as in a pecuniary point of view. Our society received quite an addition to its funds, and from that time horticulture has been quite an important part of the exhibition.

I wish here to notice the influence which has been exerted, in advancing the interest of horticulture and floriculture by the example of the late Hon. James Arnold of New Bedford. What little taste and passion I ever had in these branches, was first created by visiting his beautiful garden, and there meeting the proprietor, who seemed to take as much delight in exhibiting the beautiful, as I could in witnessing. From that time I resolved, if life and means were granted me, I would one day enjoy a like treasure and afford to others the happiness I then enjoyed.

It is but a few years, since there was much taste manifested for fruits and flowers in this part of our State. I cannot call to mind a solitary garden, until within thirty years, where a greenhouse or a grapery could be found, or where you could find a pear orchard. Apple-trees have always been abundant, and cider a favorite beverage from time immemorial. We have now in various parts of our county many thrifty and flourishing pear orchards, and in many instances they are becoming a source of income to the proprietor. Almost every family is desirous of planting a few fruit-trees as an appendage to the dwelling. Many persons are turning their attention to the cultivation of grapes, with much promise.

I could speak of the success which has attended the cultivation of peaches, and any man, at quite a small expense, can be assured of an abundant crop. My peach house for twenty years has been in successful operation, and has never failed in a single year. They are more easy to be managed and at much less expense than grapes. The quality depends, in a great measure, upon giving them free air and a genial sun.

The success which has attended the cultivation of foreign grapes is well known to many present, and as to the quality, I hope to have the pleasure of submitting that to your judgment. On the increased prosperity of our society we soon became agitated with the question of a permanent location, which eventually led to a division, and the central society was organized. Of the wisdom of this measure I have nothing to say; but I am entirely satisfied it has promoted an increased interest in the county, and that either of the existing societies is doing more for agriculture than would have been done if the division had not occurred.

I have always found it difficult to make our capitalists realize the importance of agriculture as the foundation of our prosperity. They cannot or will not perceive the rapid growth of our country under the combined influence of agriculture and manufactures. Divorce these two great leading interests of our country, and we should soon pass back to an age of barbarism.

No community ought to feel more the importance of increasing the products of the soil, than the community where we are; it is the source of our life; from it we receive our daily bread. And yet, what encouragement is held out to that man, who by constant toil is now producing four tons of hay where formerly scarcely one was received? Or what credit would that man receive, who from apparently worthless and cast-off land, covered with rocks, snags and tussocks, should present to your view a beautiful meadow of twenty acres, destined ere long to produce fifty tons of hay? And does it not speak well for the progress of agricultural science, that in our county one man can testify that within the period of twenty years, more than forty acres of swampy, rocky land, hardly worth the name of an owner, has been brought into successful cultivation?

And perhaps nowhere has the power of example been seen and realized, how speedily it exerts its influence on some neighbors, and how readily, almost unconsciously, they are found removing those obstacles to cultivation which have remained for generations, than with us.

It cannot be denied that in our county, as well as in other parts of our Commonwealth, there has been within a short period a material advance in agricultural science, and this is exhibiting itself, not only in the drainage and clearing of land, but also in the beautifying of the grounds with fruits and flowers.

As our manufactures increase, the farmers in our vicinity will find more and more demand for those products of the earth which are essential to the support of man and beast. Hay and all kinds of vegetables will find a ready market, and here we shall see the symmetrical working of these two combined interests,—agriculture and manufactures.

As I have intimated before, we are not strictly an agricultural county; our pursuits are in other directions. And while we would not attempt to compare ourselves in this branch of business with other counties, still we think it quite evident that, taking all the branches of industry, it can be made to appear that we need not be ashamed to make an open exhibit. I propose, therefore, to allude to some of the leading interests of our part of the State.

Taking the statistics of the industry of our State, we shall find wherein Bristol County in certain industrial pursuits takes a very decided lead. The whale fishery, which has been prosecuted for so many years with such success, is in a great measure confined to our county, and more particularly to New Bedford. The aggregate value of production from this source, was six million fifty-seven thousand four hundred and sixty-nine dollars (\$6,057,469), while the whole production of the State was only \$6,618,670; showing the product of our county to be within \$516,200 of that of the whole State.

We will take another product which is nearly allied:-

Sperm, whale, lard and linseed oil-	-Whole product, .		\$5,604,761 00
•	County of Bristol,	•	4,227,970 00
Manufacture of copper,	Whole State, .	•	\$8,577,672 00
	County of Bristol,	•	2,295,772 00
Metal sheathing,	Whole State, .		<b>\$</b> 954,610 00
<u>.</u>	County of Bristol,	•	601,772 00
			•
Britannia ware,	Whole State, .		\$419,083 00
	County of Bristol,	•	877,088 00
Tacks and brads,	Whole State, .		<b>\$</b> 660,516 00
,	County of Bristol,	•	609,350 00
Shovels, spades, forks and hoes,	Whole State, .		\$1,150,267 00
	County of Bristol,		1,108,550 00

You will notice in the last product referred to, almost the entire product of the State belongs to this county, at least within less than fifty thousand dollars. We might refer also to that of britannia ware. We will now sum up these seven of the leading products of the State, viz.: whale fishery; sperm, whale, lard and linseed oil; manufacture of copper; metal sheathing; britannia ware; tacks and brads; shovels, spades, forks and hoes; and we shall find that they amount to the sum of fifteen millions two hundred seventy-two thousand nine hundred and twenty-one dollars, while for the whole State the amount is only \$18,985,530,—within \$3,712,609 of that of the whole State.

I can mention other products in which this county exceeds any other in the Commonwealth,—flouring mills, corks, nails, manufacture of cotton. The facts as to this last product, I trust, will be made very plainly to appear before I close my remarks on the present occasion.

I design to speak of the early history and rapid growth of our city. There are many interesting incidents connected with the original transfer of this territory by the aborigines. I could speak of the Freeman's purchase and Pocassett purchase, all embraced within the circuit of a few miles from where we are. and the paltry sum paid for them in pots and kettles; but these noble warriors have passed away, and but few traces are left to perpetuate their memory. Their names, however, are attached to many of our noble structures, erected from the very material they once delighted to dance upon in their war songs. the early inhabitants of this place were the Bordens and Durfees. They were at one time (1680), almost the entire proprietors of what was called the Pocassett purchase, which included nearly the whole of the then town of Tiverton. The Bordens, as early as the year 1714, owned the lands on both sides of the stream, together with all the water power.

And it is a remarkable incident, that this most valuable water power remained unimproved (with the exception of saw-mills, grist-mills and a fulling mill), for the period of a whole century,—from 1714, the time of the purchase, until 1814, when the Troy and Fall River Companies were incorporated. The town of Fall River was set off from Freetown, February, 1803, and incorporated by the name of Fall River. The first town meeting was called by my father, Charles Durfee, April 4, 1803.

The next year (1804), the name of the town was changed to that of Troy. This name it retained for thirty years, when it was changed again to Fall River, and became a city in 1854.

In the year 1814, the time when the Troy and Fall River Companies were incorporated, there were thirty dwelling-houses and two hundred inhabitants.

In 1840, the cotton mills had increased to eight in number, in which were run 32,084 spindles and 1,042 looms, what we should say now would constitute a medium-sized mill. The population at this time had increased to 6,738.

From 1840 to 1860 the mills had increased only to eleven in number, containing 192,620 spindles and 4,576 looms, and the population had increased to 13,240.

We have the complete statistics of the cotton manufacturing of this place as published May 1, 1868, when we find twenty-four incorporated companies with a capital of \$6,405,000, 507,900 spindles, 11,500 looms; hands employed, 6,759; number of yards per annum, 114,364,000, or 64,977 miles, which would encircle the earth two and one-half times; coal, 32,482 tons; cotton, 23,273,000 pounds; oil, 47,990 gallons; starch, 636,600 pounds; pay roll, about \$200,000 per month. Population in 1867, 21,181; population in 1871, 28,000.

To the above should be added the following mills, either erected or in process of erection:—

	3	ILL	3.				-	Spindles.	Looms.
Wampanoag Mill,		•		•			.	25,584	586
Durfee Mill, No. 2,					•	•		47,104	1,078
Stafford Mill, .	•						.	84,928	780
Slade Mill								31,480	704
Davol Mill, No 2,		•						16,688	287
King Philip Mill,							.	32,686	582
Weetamoe Mill.							.	82,016	732
Narragansett Mill,							.	25,000	320
Granite Mill, No. 2								44,672	984
Merchants' Mill (ac		onal).					. !	32,076	644
Osborne Mill.	•							30,000	720
Montaup Mill, .								20,000	480
Chace Mill.								40,000	950
Borden Mill, .								50,000	1,200
Tecumseh Mill, No	. 2.							22,000	500
Crescent Mill, .	•	•	•	•		•		25,000	600
Fifteen new mills	5, CO	ntaini	ng					509,232	11,072

## Recapitulation from Statistics of 1868, May 1st.

24 mills. 15 "	507,900 spindles. 509,232 "	11,500 looms. 11,072 " 22,572 looms.		
89 mills.	1,017,132 spindles.			

Assuming that the fifteen mills in process of erection will cost per spindle about the same as the twenty-four already in successful operation, we shall have a capital of about thirteen millions employed in the cotton manufacture. Six other mills not fully decided upon, will probably be erected during the coming year.

The question will naturally arise, and has been often asked, Whence this large capital? Surely not accumulated fortune from abroad has wrought these wonderful changes; it has all been accomplished by the silent, irresistible force of muscle and brain, which never fail in whatever they attempt.

From the commencement of what has now become such a wide-spread and unsurpassed extension of business, it has been a home work. We have had some among us who have matured their plans, and then, in a quiet and intelligent manner, bent all their energies in their prosecution; always adopting the motto, never fail.

I will cite, for instance, the Fall River Iron Works Company, which commenced its operation in 1821.

Eight individuals of limited means formed a joint-stock company, fixing their capital at \$24,000, dividing their stock into thirty-two shares, at \$750 each, equally between the eight owners. They commenced business in 1822; their first assessment was twenty-five dollars on the share, at which time two of their number received appointments, one as agent and the other as an associate agent, with a salary to each of \$1.25 per day. We have no record of any change of salary until 1839, seventeen years. In 1825, the first meeting of which we have any record, they were organized, and became incorporated, with a capital of \$200,000. At a meeting in 1828, certificates of stock were issued. In 1831, three of the original stockholders had retired, having sold their stock to their associates at cost and interest.

In 1833, Richard Borden, agent, was instructed to build suitable buildings for the purpose of printing calico.

In 1837, September 12, Holder Borden deceased at the early age of thirty-eight years. He was the leading agent in all these contemplated plans, and it was by his advice that this lately organized company embarked in the extensive business of calicoprinting. Although the youngest of the eight, he was the first tosfall; but he has left his mark upon the enterprises of this city which time can never efface, and his mantle has fallen upon others. One only remains of the noble eight; he yet stands among us as a wise counsellor and a safe guide.

In 1845, January 29, the Iron Works Company obtained a special Act to manufacture cotton cloth and prints, with a capital of \$1,000,000.

June 9, 1845, the company made its first dividend, it being two hundred and fifty shares in the Fall River Branch Railroad. The Metacomet mill, of about 24,000 spindles, is the profits, in twenty-four years from organization, of the Iron Works.

You have this corporation, which commenced its existence in 1821, now presented to you in its limited operations, having extended its means to found another corporation, the American Print Works, with a capital of \$360,000, printing 56,250,000 yards per annum; using \$600,000 worth of madder and garancin, and \$400,000 worth of other drugs and dyes; consuming 18,000 tons of coal, and employing 900 hands. The value of its annual production is \$5,000,000.

Thus, gentlemen, I have presented to you in a very imperfect manner some of the features of the agricultural interests of our county; also our relative position in industrial pursuits; and lastly, in a brief sketch, the great leading interest of this part of our State; and happy shall I be if, in my remarks, I have said anything which will show this subject more clearly, and bind together more strongly these two great leading interests of our country, Agriculture and Manufactures.

The Board then adjourned to two o'clock.

## Afternoon Session.

The Chairman announced that the subject for discussion was

## THE PREPARATION AND SEEDING DOWN OF LAND.

Mr. Johnson, of Framingham. It will be remembered by you all, that at the annual meeting in Boston last year, I presented a report upon the time of cutting and the mode of curing hay; and as it seems to me important that that subject should come first in this discussion, I may be permitted to say a word or two upon it.

By the statistics, I find that the neat stock of this county is increasing at a greater ratio than the grass; not that the grass crop is falling off particularly, with the exception of the last two years, but the neat stock is increasing rapidly. Now, it is essential that we should have the grass, or something to take the place of that grass or hay, to keep up our stock. In 1865, the value of the hay in the Commonwealth was nearly \$14,000,000; and if to that be added the value of the grass in our pastures, it exceeded all the other agricultural products of the Commonwealth, showing that the grass crop is the most important crop that the farmer can raise. Hence the necessity of thorough preparation of our land for the reception of the seed of all the varieties of grasses both for mowing and pasture land.

Now, gentlemen, at the time the report to which I have referred was made, it was thought by some that the Board were responsible for it. For what I say to-day in regard to the hay crop, I am individually responsible; and I will repeat what appeared in the original report, that if the grass were cut at the proper time, and cured in the proper manner, there would be millions of dollars saved to the farmers of the Commonwealth in hay; because, if there are \$14,000,000 of hay cut annually in the State, and if, as I believe, from the experiments I have made, hay that is cut at the proper time, and dried just enough to keep,—which will be done in three or four hours,—is worth one-sixth more than hay which is dried as it was when I was a boy, you will see at once that there is a great inducement to cut and cure our hay properly, as I consider it.

The first thing which a farmer must do in order to increase his hay crop is, to look to his manure. We cannot prepare the ground for seed properly unless the manure heap is cared for. That is the first thing. Then it is important that we should plough our ground properly, that it may be in a suitable condition to receive the manure and seed. If the ground is not ploughed to the depth of seven or eight inches, possibly nine, we carnot get a surface cultivation so thorough that the roots will not be liable to dry up. We cannot get mould enough (to use that term) by shallow ploughing, to insure our crop against the dry seasons of our New England climate. And it is also essential, as every farmer well knows, that we should have a proper quantity of manure, in order that the sod may have plenty of food, and that we may have a paying crop of grass. It does not pay, in Massachusetts, to mow ground where we do not get more than ten or fifteen hundred pounds of hav to the acre, high as labor is now. I should say, that on most soils, about fourteen cords of compost manure should be applied to the acre in planting the ordinary farm crops preparatory to seeding our grass lands.

There is a great difference in the kind of plough which we use for cultivation. I have used various kinds of ploughs, and while I do not intend to give the preference to any kind here,—for there may be plough manufacturers present, for aught I know,-I will say, see to it that you plough the land in such a way that it leaves the centre of the sod a little like the back of your Don't plough until the land is dry enough to work light and pliable. I think a great deal of injury is done to the crop by ploughing early in the spring. Never plough until the soil is ready for it. Better plough in June and plant in June, than to plough and plant before the soil is dry enough, as I have said, to work easy, light and pliable. I would be cautious about the plough that I used, as that is very important. We all know, that it requires a longer time to prepare the land to receive the manure and seed, when we use one kind of plough, than it does when we use another kind.

After I have ploughed I use a roller, or an old-fashioned bush harrow, so that all the little spaces may be filled, and that the manure, when it is applied, may be spread evenly all over the surface. After it has been thoroughly harrowed or cultivated

with the cultivator or horse-hoe it is fitted (the manure having been put on) to be marked out and the crop planted. Then it becomes necessary again, in order that the ground may be in a proper state for seeding next year, that attention should be paid to keeping it free from weeds. Some farmers this last year thought, when they had hoed their corn once, or put the cultivator through two or three times, that they had done all that was necessary; the consequence was, the ground was full of weeds, and they had a small crop; and next spring, when they come to seed, we all know that the ground will not be in proper condition to receive that seed.

Ground that has been planted and is to be seeded the following spring should be ploughed in the fall, after the crop has been removed, that it may receive the action of the frosts, and be better prepared for the spring seeding. Again, the stones should all be removed; or, in preference to that, I would recommend that they be sunk in the ground, unless it is very stony and gravelly. Stones are no disadvantage to a crop-Under this plan, when it comes spring, our work is simply to go forward and replough two or three inches less in depth than when we turned over the sod. That is my opinion. I am not laying down any particular rules, but I hope you will all try this. I would plough about three inches less than I ploughed in the spring when I turned over the sod, because I think it best that the sod should remain at the bottom for the present. Then my practice is, to go over the ground with a harrow. After the harrow, I put on a one-horse plough, going about three inches deep. Plough it fine, and if grain is to be sown (and I would recommend sowing grain in the spring for the benefit of the grass seed), sow upon the furrow, harrow, sow grass seeds, bush and roll. That prepares the ground, so that it is all ready for the mowing machine to pass over. A pair of horses may trot over that ground, and you do not dull or break your knives. It is all ready for the horse-rake to follow, and that goes smoothly, and is not so liable to injure the grass roots as where the ground is left in an uneven state. I have thought many times that the spring-tooth horse-rake is very injurious to the crop of grass the year following, for the reason that it breaks off a great many of the roots of the grass, especially of herdsgrass. It breaks off the little bulb of the herdsgrass, and when that bulb is broken off, you get no more grass from that root. Therefore, although I am in favor of about all the agricultural tools now in use, I am inclined to object a little to the horse-rake. I think we may find some machine to rake our hay that is better than the spring-tooth horse-rake, although I have used one for many years.

Now, if we plough our ground slightly, cultivate it slightly with a harrow, give it no pulverization, plant it, hoe it carelessly, and then seed it down, when we come to mow, the knives of the machine are dulled by the dirt and broken by the stones, the teeth of the horse-rake scratch up the dirt with the hay, and it is rolled over and over in the winrows, and gives us just what we don't want in our hay. It wears the teeth of the cattle, and is a dirty mess to feed, and they don't relish the hay as well as they do good, nice, clean hay, well cured, and cut early.

For mowing, I should not recommend the early grasses to be mixed with the late. If not mixed, the grasses usually sown will be in blossom very nearly at the same time, and you can cut and cure your hay so that there will be no loss on either kind of grass; whereas, if you mix the early and late grasses, when the late are fit to cut, of course, the early will be in too advanced a state to make the best hay. But for pastures, I should decidedly recommend a mixture of the early and late grasses, and quite a number of varieties, as the early will come forward and mature before the others, which will come in in their turn, and thus the cattle will have later pasturage than the early or late grasses alone could afford.

I think a great mistake is many times made by covering the seed too deep. Many farmers harrow their seed in, and a great deal of it never germinates. I would recommend the covering of grass seed as lightly as possible, never using a harrow to put in the seed. The object of farmers should be to obtain the greatest income from their lands with the least amount of labor. Now, the question is, In what way can we do that? There is no doubt in my mind that the grass crop is the most profitable crop that we can grow in the eastern part of Massachusetts, at least, except in the immediate vicinity of our cities, where market gardening would pay best, and to get that grass crop at the least amount of labor should become our object. But it cannot

be done by planting in the spring, with corn and potatoes, and the common field crops. We should make a change in our mode of farming; and may it not be made, in some degree, by seeding down our lands in the fall, and especially as we have had two years of very dry weather, making our old fields almost barren? There are many fields, acres upon acres, in Framingham, that are covered with wormwood, and not a root of grass apparently left. I have noticed the same thing existing in different parts of the State. We cannot afford to wait for all this land to be ploughed and planted and re-seeded according to the usual process; it takes too long; too much of it would be waste. We must therefore bring that land into grass in some speedier way.

Now, there are many acres that could be re-seeded this fall, before the ground freezes up; and perhaps that is the most profitable way at the present time, to commence on the ground by ploughing and re-seeding this fall, just as the ground freezes. There is no doubt, however, that August is the proper time for seeding our grass lands. That seems to be the time when nature distributes her seeds, and I think grass seed succeeds better when sown in August, than in any other month. I should recommend seeding in August; but to do that we must hasten our having, in order that we may prepare the manure heap, attend to the ploughing, etc.; and it is a great advantage to the farmer to get his having all out of the way, at least by about the tenth of July. His meadows may be left a little longer, but no English grass, in my judgment, should stand later than the twelfth of July. This last year, in my section of the State, the English grass that stood later than the tenth of July, was not worth as much as that which was cut at that time. Now, in fall seeding, it is essential that we should plough pretty deep Many farmers, for August seeding, plough shallow, manure, harrow slightly, and sow the seed, and the first thing they see is the grass starting up from the old roots; the ground becomes nubby, rough and uneven, and if the next season is dry, its yield is very small and about run out. I think the ground should be ploughed at least from seven to nine inches deep, and thoroughly pulverized, before the manure or the seed is applied. And in ploughing in August, if we cut our hay in good season, we plough in quite a heavy grass crop, which, of course, is no disadvantage

to the crop of grass that follows. The soil should be thoroughly cultivated and stirred with the harrow or cultivator, or something of that kind, until it is made perfectly fine, without bringing up the old sod. It is the same with the soil, I suppose, that it is with all sorts of drugs. We are told by the apothecary that the more we rub this or that down, the more strength we get out of it for medicine. I take it, it is just so with the soil. The more we mix it and work it, the greater will be the strength of the soil, and the greater will be the crop that we take from it. Therefore, it is important that we should follow up the plough with the cultivator or the harrow, in order that the soil may be thoroughly pulverized. The manure also must be made very fine, and allowed to decompose before applying it, so that the little roots may take hold of it readily when the grass springs up, and not be obliged to wait until that manure becomes decomposed in the soil; if they are, the plant will be weak, and the crop light.

There seems to be a proper time for ploughing, although we have got to do it as the man cut his hoop holes,—when he had an opportunity. Still, I should advise ploughing, as far as possible, when the dew is on the ground. I am aware that it will not do for the farmer to wait to plough all his ground when the dew is on; still I would advise him to plough as early in the morning as possible; and if there are any young farmers here, I say to them, depend upon it, if you plough early in the morning, you will gain in the crop, you will gain in every way during the day. I have noticed in my garden, that that portion which has been hoed or cultivated with the dew upon the ground, produces better crops than that portion which was hoed in the heat of the day; and I have no doubt it is so in the fields. In fact, if you plough a strip of land with the dew on, and another later in the day, and wait a week or ten days, and then replough, you will find a difference in the soil as you turn it over.

Clay soil should be ploughed when it is quite dry, so that it may be easily worked. If clay soil is ploughed too early in the spring, when it is wet, it will bake and become hard, and it is difficult to work it up into such a state that the roots of grass or grain can take hold of it. It must be worked, I repeat, when it is dry; if not, it will be full of little lumps, which will

he will grow rich. Any farmer can well afford to give his land thorough culture and a liberal dressing, but we must not undertake to do too much in a season. Labor is quite an item at the present time; it is both high and poor. The fact is, the laborer has become master; the employer must be the servant in most instances. I have usually called upon my help mornings, and I must say, some of them have not been the pleasantest looking men I have seen, when they made their appearance, although I had made them a pleasant call. I believe in commencing work early in the morning, and leaving early at evening.

Some farmers have bog meadows, which have been worked to some extent, and such land produces well when thoroughly reclaimed, but it takes a great amount of labor to do it, and to do it in that way (as the saying is) that it will stay done. The process is, as you all know, by ditching, draining, burning, etc., and if top-dressed once in two years after seeding, it makes the very best of grass land. Then we have certain kinds of wet ground which is very full of rocks and stones, and cannot well be ploughed. In some instances, we have used the spade,-a common, narrow Irish spade. I know that it is expensive, but I had, and have now, some land which needs the spade; it is about impossible to plough it. I spaded two and a half acres of that ground, at an expense of \$42.50 an acre; the land cost me \$45 an acre; and the first year I cut 5,995 pounds of hay to the acre. I don't remember what hay was worth at that time, but it more than paid the expense. Certainly it will pay to spade these rough pieces of land that cannot be very readily ploughed, if the soil is good.

It is true that farmers are obliged to live rather short and work pretty hard, but many of them acquire a good property. The farm is really the farmer's bank, where he makes his deposits, and it is done with the strictest economy, and the very hardest of labor. I remember reading, a few years ago, of a gentlemen in Middlesex County who had fifty apple-trees to set out, and being called away on the day he desired to have his trees set, he directed his gardener to go to work and put them out. When the gentleman came home, he found that the man had set out only ten trees, and complained because he had done so little. The next day, he worked with his gardener,

and they set out all the rest—forty trees. Ten years afterwards, he stated publicly that those ten trees that the gardener set out that day were worth ten times as much as the forty trees he set out in one day. This is but an illustration, gentlemen, of the fact, that it is by care and attention to the products of the soil that we can hope to realize satisfactory and profitable results. If we wish to make men and women of our children, we must give them care and attention in their childhood, and bring them along step by step as they increase in years. But, gentlemen, I see before me some men of high culture, and this part of the subject I shall of course leave to them.

With these remarks I leave the discussion to others more able than myself.

Mr. GOODMAN. I merely rise to say that Col. WARING, of Newport, whose name appears on the programme for to morrow, to open the discussion on Farm and Garden Vegetables, supposed, through some misunderstanding, that he was to speak to-day, and is present. As he will not be able to be here to-morrow, I hope that we shall have an opportunity to hear him now.

Mr. SLADE. I move that Col. WARING be invited to address the Board at this time. Carried.

Col. Geo. E. Waring, Jr., of Ogden Farm, Newport, R. I. I have listened with much interest to the remarks of the gentleman who has preceded me, on the subject of the preparation of land for grass; and although my intention had been to speak on the subject of the cultivation of garden vegetables as a farm crop,—a most important branch of the industry of this neighborhood,—I think I may be allowed to vary my plan, and to speak also on the question of the preparation of land, not only for grass, but for all crops.

Dickens has said, that that part of the farmer's holding which pays the best for cultivation is the estate which lies within the ring fence of his own skull; and it seems to me, not only that each of us may, in our own operations, derive, in the end, the greatest profit from the cultivation of our own minds, as business men and as farmers, who intend to make use of our best faculties in carrying on the operations connected with our business, but that, as a Board of Agriculture, you, gentlemen, will do more good to the agricultural interests of the State of

Massachusetts, if you give that direction to your efforts, more, perhaps, than you have hitherto done, than if you confine yourselves simply to the promulgation of recipes for doing certain kinds of work. To my mind, what New England agriculture especially needs is not so much to know when, and how, and what it shall plant, as to know why it plants, how what it plants grows, &c., in what manner it may be made to grow better, to grow with the least injury to the soil, most in conformity with the needs of the community, and therefore the most profitable.

I am an unmitigated high farmer; if I were not, I would go West; I would go to some place where labor is worth two and a half or three dollars a day, and where land can be bought for a dollar an acre, where an immense amount of skinning could be done, and a certain profit would accrue, without reference to the condition in which I might leave the land. That is not my view. I do not believe that that sort of cultivation will, in the end, give me more money, more comfort, more satisfaction, and certainly not more intelligence. I believe that the best field in America for any intelligent farmer is right here in New England, close by great communities, who must be fed with crops brought from long distances, and where intelligent men, who come in advance of the high cultivation that is sure to follow in a few years, will get the benefit of the very high prices. As an instance, it is a part of my business to grow cabbages, and this city of Fall River is one of my principal markets. Fall River is supplied with cabbages that come from New Jersey. who grow them there grow them very intelligently, spend an immense amount of money in preparing their land, and make a great deal of money by it. Before they sell their cabbages, they must load them on their wagons, carry them across the river, paying ferriage, deliver them to the commission merchant, who stores them away in his place, paying for the unloading and stacking up. The commission merchant charges a commission of 12½ per cent. for the sale. He sells them to a wholesale merchant, of Providence, who pays cartage and freight, and cartage again, to get them to his own store, barrels them up, carts them to the "Bradford Durfee," which takes them to Fall River: and here they are sold to a dealer. That dealer will gladly give me the same price for cabbages, out of my own wagon, that he gives for those delivered from the boat. So that I get not only as much money for my crop as the Jersey man—that is, a fair profit on the cost of raising the article, for no staple article is ever grown many years below the cost of raising it,—but I get the commission of the New York man, the commission of the Providence man, the cost of transportation from New Jersey to New York, from New York to Providence, and from Providence to Fall River, all of which amounts to a very considerable sum,—more, I think, on the average, than the original cost of the cabbages in New Jersey.

This is only one instance. The same thing is true of hay, although hay, as a general thing, is not brought so far, and the cost of transportation is not so great. But hay is worth much more here than in Vermont, where the demand for it is limited. The great demand for hay is to feed the horses that are used in our large towns. So I believe that we should start with that leading principle, that the agriculture of New England, before it reaches its perfection, or anything approaching its perfection, must deal directly with the problem: to raise, not what can be as cheaply and easily brought from the far West, or from any remote district, but what can only be raised right here, or what, being raised here, will save an excessive cost of transportation from long distances; that is to say, something the price of which is regulated by the cost of transportation. I remember that, in 1852. I delivered an address before an agricultural society in the north-eastern part of Maine, 165 miles north-east of Bangor. The land was easily cultivated, very rich, from the burning of the timber that had been cut down in clearing it. The great demand in that immediate vicinity was for food for the lumbermen and the lumbermen's teams; and wheat, of which they were producing regularly about forty bushels to the acre, was worth the price of wheat in Bangor, and that is Western wheat, brought from Ohio and Western New York, with the cost of 165 miles of wagon-hauling in addition; so that, when it was \$1.40 in Bangor, it was selling in Aroostook for \$2.50. The men who grew wheat in that vicinity, therefore, received an extra profit of \$1.10 a bushel, from their position.

Such instances as these may be found here and there all through the country; but, as a general rule, if we go out of the very small circle of what we may call "high farmers," or "fancy farmers," if you please, we find every one growing here

precisely what is grown elsewhere. When I commenced farming in New England, I followed the beaten track. I commenced growing corn, and continued it until I convinced myself thoroughly, that although I could produce from 75 to 85 bushels to the acre, without any very unusual outlay, where the soil is good, I could buy that corn much cheaper than I could produce it. That is to say, the same amount of labor that is expended upon a field of corn, and which absolutely must be expended, if we would get a good crop, will pay very much better if expended in the raising of cabbages or roots. I do not mean to say that it will not pay, ordinarily, to raise corn, but I say that it will pay so much better to raise other things, that we had better, in my opinion, leave corn, as we leave wheat, to those who have more land, smoother fields, and greater facilities for the use of machinery, and devote our land, and especially our manure, to producing that which will pay us more money.

Precisely how the impression is to be produced among New England farmers generally, that they must cultivate in a better way, cultivate more thoroughly, cultivate for better results, it is difficult to say, for there are prejudices among them which, as all who have encountered them know, it is very difficult to remove. I do not believe that anything very effective can be done except by example. We must get certain men, here and there, to do at least a small amount of work in the way that we believe to be best, and by the example of these specimens of good cultivation on a small scale, produce an impression that may have a lasting effect upon the community; for the moment we show that there is a profit in any transaction, that moment we have started a movement that will never stop. Our neighbors may scoff at our processes when we first introduce them; and if they fail (as perhaps they may), they will continue their scoffing; but if they succeed, there is an end to all objection. However stolid they may have been in opposition, they will not only accept the suggestion and follow it out most carefully, but they will firmly believe, themselves, that they have done it all their lives.

Probably nothing better can be done to produce the effect that I speak of than to secure a perfectly good seeding down of land to grass. Any intelligent farmer will appreciate the fact that land that will produce two and a half tons of hay to the

acre, is worth almost any amount of labor or care or money that it may have cost. There is living in my neighborhood, a farmer who has made his own way in the world, who was born and brought up upon a farm, who is not a rich man, by any means, although he has a little money in the bank, who paid \$377 an acre for four acres of land in grass, four or five years ago. From that time to this, that land has never been ploughed, nor had anything done to it, except that he has kept it well topdressed with seaweed, and he told me the other day that it was one of the best investments he ever made, for notwithstanding the high price, the crop of grass was so good, it always gave him satisfactory interest for his money. Now, the secret of the fertility of that field lies simply in the fact, that it was for many years an onion patch. It was thoroughly cultivated, and so put into a condition that it will never forget. So long as it receives a sufficient top-dressing, it will probably remain in grass year after year. Now, what we want to know is, how to make all land on which we produce grass, onion fields. It does not cost much. If we cannot take the land in its present condition and cultivate it and manure it, simply for the sake of the grass, let us put it into some crop that will pay for more thorough cultivation and manuring, and bring it in the end into a condition where it will produce two and a half tons of hay to the acre. I believe much more is possible, on good land, but that is enough for a good profit.

In commencing the preparation of land in this way, no matter whether our intention is to plough it and seed it directly and bring it into condition by the use of manure, or to improve it gradually by a long period of cultivation, the first thing we must look to is draining the land; and as the time is short, I will confine myself entirely to this branch of the subject. Everything else connected with it you all of you sufficiently understand: the importance of manure, the importance of thorough cleanliness, and all that. But it seems to me that farmers generally, not only in New England but throughout the country, fail to appreciate the necessity for thorough underdraining, and do not know exactly how underdraining should be done to secure the best results. There is one almost insuperable objection to this method of improvement, and that is, its very great cost. But the reason why it is so expensive,—

not much less than \$100 an acre; \$85 according to my experience, if the work is done well.—is because so little of it is 'done. The tiles must be brought from a long distance, and obtained of a man who sells so few that he is obliged to ask a high profit on what he does sell. Then the ditching must be done by men who are not accustomed to the work, with very common tools, and they make the ditch a foot wide at the bottom, when three or four inches is all that is necessary. these things conspire to make the cost \$85 an acre, where it ought not to be over \$35 or \$40. But notwithstanding its high cost, wherever draining is necessary, I conceive it to be unprofitable to cultivate the land without it. I have on my own farm, over thirteen miles of drains, four feet deep. sorry to say, cost from 85 cents to \$1 a rod. But it is a most important and necessary improvement. No matter how rich your land may be, it cannot make use of the riches that it contained originally, or that you have put into it, unless it is in a condition to admit the air, and to allow it to attain a certain temperature, so that vegetable growth can go on without being disturbed. If your crops are to be choked off by water until June, when they might commence their growth early in May, you lose not only the time when the crops might have been growing, but you lose the advantage of early maturing your crops, getting them out of the way of frost, and getting your grass ready to be cut in good season, which comes from the free and ready admission of atmospheric air, and from the absence of evaporation of water from the surface, which retards the growth of the plant, and holds everything, even the chemical processes of the soil, in material check.

There are two or three things in connection with drainage which, if they were better understood, would perhaps tend to a more rapid extension of the improvement. One is, that a very small pipe will discharge a large amount of water. I am frequently appealed to by people living in my neighborhood, to know where they can get a certain amount of tiles, three, four, five, or even six inches in diameter, to lay a few hundred feet of drain. It generally results in their going away and ordering tiles 1½ inches in diameter. In draining an acre of land, no matter how wet it is, if it is wet only from the water that falls on the surface, and not from springs flowing into it from the

adjacent ground, a tile  $1\frac{1}{4}$  inches in diameter is sufficient to make it entirely dry. Not only that, but very rarely will more than half of that be filled. Tiles  $1\frac{1}{4}$  inches in diameter can be bought for  $2\frac{1}{2}$  cents a foot, while tiles three inches in diameter cost three times as much, including the expense of transportation to the land. Here is a difference at once, of at least \$20 an acre, in draining an ordinary field.

Then in the matter of digging. Farmers think they must begin by ploughing as deep as they can. A man thinks he has made a great advance if he can plough down a foot and a half deep, and throw all that depth of dirt out by horse power. Then the man who digs the drain must have a wide shovel, and there must be room for him to stand in, and to change his position, if he gets tired, and it results in throwing out great blocks of earth, when perhaps little slices would answer the purpose; throwing out three or four times as much as is necessary, and at a very great cost. The spade leaves a clean, firm bank. The plough a ragged and crumbling one.

Another point where failure is often made is, in the direction that is given to drains. That seems to be a thing in which the human mind is most perversely set in the wrong direction. Ninety-nine out of a hundred, even of those who have given some thought to the subject, if asked to lay the drains on a piece of land, will run them diagonally down the hill so as to catch the water, as they suppose, as it comes down, and carry it off. That is exactly wrong, for the reason that the drains that are to be laid are only pipes that leak at the joints. The water gets into them by coming in at the joints. They are as open on the lower side as they are on the upper side; the water leaks in at one joint, runs along to the next, and then perhaps leaks out. The object should be to get it into the pipe, and offer it an inducement to go out, give it no chance to run in any other direction. It is as impossible to catch the water by laying a drain along a side hill, as it is to catch the water running down a piazza roof by setting up a loose-fitting board; it will run along the board until it finds a chance to get under it, and then it will run on down the roof. A drain should be run directly up and down. the slope, so that the moment the water gets into it, it will have no course but to follow it to the end. That would be a very simple thing, if all lands sloped in one direction; if there

were no irregular undulations. Of course, it is impossible, in an irregular field, to have the drains run directly down the slope, and at the same time be parallel to each other, which would be the most economical. Drains will work to the best advantage at a certain distance from each other, and the moment we vary the parallel direction, we either draw them too far apart, and have incomplete work, or crowd them too near together, and make the work more costly than is necessary. Consequently, there must be judgment used in laying out a system of drains, to make such a compromise between the up and down hill slope and the parallel lines we desire to have, as shall best accomplish the purpose, without being too expensive.

Of course, in laying a drain, the great point is the question of outlet. Unless we have a good free outlet, from which the water discharges in the open air, not backed up by a stream nor by an irregularity of the ground, there is great uncertainty as to the permanence of our drains. There must be a free flow, so that the silt that is washed into the drain shall be immediately carried away. The outlet being a good one, and the line for the main drain being run along at the foot of the hill, so as to have a sufficient fall,—and by sufficient, I mean six inches in a hundred feet,—and then short drains being laid to lead all the water into the main drain, and have it run freely to the outlet, we are in a position to have the work properly done at reasonable cost; and, if we can get our tiles without difficulty, we may do a sensible, a useful and economical job.

One mistake that is frequently made is, in neglecting to lay a main drain, each drain being allowed to discharge either into an open ditch or out of the side of the hill, so that along the hill-side there are instead of one outlet, twenty outlets, that play the mischief with the drains. They need the utmost care and attention. They afford ready means of access to field-mice and other animals, which get into the pipes and sometimes stop them up. Our work may be very much injured if we do not take care of each outlet; and if we count the cost of a main drain connecting the laterals, and carrying off all the water to one point, we shall find that the expense will be very small compared with the labor that it will be necessary to give, when no such main drain is provided.

The plan of drainage having been made, the next thing to

do is to secure the tiles. That, of course, is simply a commercial matter, in which no advice from me is necessary.

The next thing is, to prepare for the digging of the drains. And here considerable improvement over the usual methods may very easily be made. In the first place, the idea that a plough must be used is a fallacy; it does not help, it retards the work. It leaves a ragged edge, throws out a great mass of earth, and leaves it in such a way that it is likely to fall back and trouble the drainers afterwards. It commences the drain with a width of two feet, when a width of a foot, or thirteen or fourteen inches, at the outside, would be ample, and we have a crumbling, loose edge, instead of the clean edge that a good drainer always leaves directly at the side of his ditch. Of course, the diggers must be Irishmen, and they must be men who, having been "draining all their lives," will be determined to do it in their own way. But it is much better that they should not be allowed to do it in their own way. They will tell you that they will do the work for so much a rod; and the price may seem reasonable; but it is very much better to hire them by the day, while teaching them to use the new tools, for the work can be done much better and more cheaply with these. I refer to the narrow draining-spade which you have probably all seen. I am doing some draining for a near neighbor, with a gang of experienced men, at sixty-five cents a rod, for a three and a half (31) feet drain, and I am satisfied they are making \$4 a day. The reason why they make that is because I cannot get ordinary workmen to do the same work any cheaper. If I hire ordinary diggers, they will earn \$1.75 or \$2 a day, but the work will not be done so well nor so quickly. These men have learned how to use the tools, for they have used them for years. Their first operation is to take the broader of these spades, which is five inches wide at the point, and seven or eight inches wide at the top, and this they drive directly into the ground, to the depth of about fourteen inches, and take out the sod, which shows the round or scooped form of the spade, each end being four or five inches square. This is taken out with a twist, and laid on the bank, with the grass end, not directly against the edge of the ditch, but a short distance removed, which makes a good protection for the earth which is thrown out afterwards, which slides over directly behind it. When they have gone to a depth

which, with the crumbling at the bottom, is about thirteen or fourteen inches, they take a narrower spade and work in the same way, taking out about a spade and a half, lapping a little at each cut, and throwing the dirt over behind the other. Then they are down two feet and a half, and that is usually the lowest point to which their feet go. Then they do the rest of the work with a scoop. They have a long, goose-necked scoop, which is quite heavy and well-balanced, so that by giving it a throw, it may be struck in five or six inches deep. The men continually work backward so that they cut away the ground on which they stand, and when they get to the full depth, the finished bottom is a foot or a foot and a half below where the This work is not difficult, and the saving is so workmen stand. great that I am satisfied that the cubic capacity of the earth removed by a skilled workman with the proper tools, is not more than one-half what a common workman would take out with a common spade, in making a drain of a given length and depth.

Now, what we need is to do so much draining that the number of skilled workmen will increase to such an extent as to create a competition, and then we can get our drains laid for forty cents a rod, instead of sixty-five; perhaps for less. One man, a Canadian Irishman, who has worked for me, and who had learned his trade in Canada, told me one winter he worked in the public park at Hartford, and averaged \$6.50 a day, right by the side of the men who were regulating the price,—common Irish laborers, who were ditching in the ordinary way.

The ditch having been excavated with this scoop of which I told you, is immediately graded with the same instrument. As he takes out the last earth, the man carefully smooths the bottom, before he gets too far back to reach it, and brings it to a perfectly uniform grade. Then, when he gets through this part of the work, he lays the tile in it, not by getting down into the drain, and breaking his back in trying to get the tile in its proper place, but he puts a collar on the end of the tile, and then inserts a long-handled iron tile-layer into the collar and lowers the pair to their place, withdraws the iron, takes up another tile, lowers it, inserts it into the collar of the one already in position, withdraws his iron again, and so he goes on, step by step, without disturbing the regularity of the bottom.

Now he does—what? The most important of all things, after great care in laying the tile, is to pack them securely. He puts directly upon the tile the finest, most compact, most clayer soil that he can find, without a particle of vegetable matter,-no grass, no straw, no shavings, no leaves, no anything, except this hard, clayey soil, which is put on to the depth of seven or eight inches, and then gently beaten, to fix it in its place, and make a perfect matrix round the tile, holding it perfeetly tight. I believe that one operation has more to do with the permanence of a well-laid tile drain than any other one part of the work. It is very natural to think that if we put a pipe into the ground, we must put some porous material over it, to enable the water to pass through to the tile; so we throw over it brush, or leaves, or something of that kind. not the way the water gets into the drain at all; it comes up from below; and in putting this porous material over the tile, the chief end we accomplish is to put there a mass of organic matter, that is sure to decompose and form a fine mould, which will be carried, by the little water which comes trickling from above, into the tiles, and perhaps choke them up, by accumulating at one point or another.

I have said that the water gets into the tiles from below. This idea may possibly be new to some of you, but it is one which is very well established. In a dry season, when it has not rained for several weeks, the soil is dry, not only down to the level of the drain, but for a considerable distance below it. The water table has settled down so that the water level in the wells is perhaps ten feet below the surface. There comes a heavy rain. Now, when the water falls upon the ground, it has no instinct to teach it that there is a drain in a certain direction into which it may get and be carried away; it will simply follow the law of gravitation, and descend into the soil until it strikes the water table, and if the rain continues, the water table rises nearer and nearer the surface, until finally it rises to the height of the bottom of the tiles, and then, as if it had risen to the top of a drain, where it would run over, it runs into the drains and escapes. In my opinion, the idea that water ever, for any considerable distance, travels laterally to find a drain is quite a fallacious one. It is a natural one, but it is a fallacy. It is one that will not hold water.

Dr. Durfee. How near together do you lay these drains? Col. Waring. Those I am laying now are forty feet apart. Perhaps that is a little further apart than they had better be laid, with a depth of 3½ feet; but on figuring up the cost, as I have to do, I found that was as near together as I could afford to lay them. The rule, so far as there can be a rule for anything about which so little is known, is to put drains that are four feet deep forty feet apart; if made more shallow, as I think they may be, with profit, they should be placed nearer together. The custom in some parts of England, in heavy

clay lands, is to make the drains three feet deep and twenty-one

feet apart.

. It would take too long to discuss the reasons why draining is necessary, and besides, in my experience, I have never found that any amount of discussion as to the reasons why it was necessary was effective. The only thing that farmers want to know about draining is whether it will pay, and if they find that it does, reasons seem to have very little to do with the adoption of the process. I am satisfied, that if it were not for the inordinate cost of draining, if it could be done for fifty dollars an acre, even, most of the land of the island of Rhode Island that needs draining (and that is probably more than one-half of the whole), would be drained by the farmers who own the land or rent it. Of course, a majority of the land of New England does not need draining. I think it was one of the great fallacies of the early teachers of the system, that draining would not only make wet land dry, but dry land wet. Draining will enable heavy, wet land, which suffers very much in summer, to absorb moisture from the atmosphere and so resist the drought; but if a piece of land is already dry enough to have a free circulation of air through it, I doubt if it will be materially benefited by draining.

Secretary FLINT. How about the comparative cost of stone and tile drains? Many farmers cannot see the economy of using tiles, when they have plenty of stone on the land which is to be drained. Possibly the Colonel can give us some information on that point.

Col. Waring. I have no question that tiles are much cheaper, even at the high price we have to pay for them now. I have heard it stated very often, by farmers who have tried the

experiment, that they have convinced themselves, that if the stone were delivered to them free of cost, on the bank of the ditch, they would not dig a ditch large enough to accommodate them, and put them properly into it. Having the stone on the land, they would rather buy the tiles to put into the drain than to use the stone.

QUESTION. Don't you think that extravagant?

Col. Waring. No, sir, I do not; because you are obliged to make the drain a great deal larger if you lay stone in it, and your stone must be laid with some care and skill, by a man who is worth pretty good wages. I believe it would cost more to lay a drain four feet deep with stone, if the stone were delivered on the bank of the drain, than to buy the tiles for it and to lay them. The cost of the tiles, delivered in Fall River, for an acre of land, supposing the drains to be forty feet apart, would be just about \$25, an acre would require about one thousand feet—sixty rods. Those would be 1½ inch tiles. Now, I think there are very few fields in which you could lay a stone drain of sixty rods, digging the wider ditch you would be obliged to, for \$25.

QUESTION. Supposing it is in a locality where you have to pick out a foot and a half of hard-pan to get your three feet?

Col. Waring. I don't see how you are going to get along, if you use stone, without making a wide ditch. You must have it wide enough to work in, and that means two feet at the top and a foot or more at the bottom; whereas, a man can lay a tile drain with the ditch five inches at the bottom and fifteen at the top, if it is only three feet deep.

Mr. Allis, of Conway. I can show the gentleman a stone drain that has been down thirty-four years, and the water runs as freely to-day as it ever did.

Col. WARING. I am not objecting to the making of stone drains. I have seen a great many good ones; but I don't believe they are any better than tile drains, and they are more expensive.

QUESTION. Suppose you have the stones on the ground?

Col. Waring. You will find it a great deal easier to cart them off and put them on the side of the road, or dig a wide and deep ditch and throw them into it, if you want to get rid of them. I have tried both methods. I will confess that I

started with the belief that the tile drain is the best and cheapest, but that belief has been strengthened by the experience I have had.

Secretary FLINT. How would it be where you are liable to come constantly, at a depth of two or three feet, in contact with large rocks, which compel you to deviate from the direct line? Would not a stone drain, in many cases of that kind, be better than a tile drain?

Col. Waring. It would be better, in many cases, to get a perfectly uniform bottom, to clear the rocks out.

Secretary FLINT. Suppose they are so large that they cannot be removed, or that you strike a ledge?

Col. Waring. Then the real floor of your drain is going to be the level of the rock, and it is no use to dig below that. Find the lowest point you can get, and then grade to that depth.

Secretary FLINT. In many cases you would want to go lower than the rock.

Col. Waring. In that case, you would have to dig a wide ditch and get them out by main force. But stones as large as a man's body, even, are not apt to interfere with a tile drain. Now and then one will crop out at the bottom of a drain, and you must get it out, even if you have to blast. But if you should take a hundred stones, as large as your body, and put them on the line of a drain within four feet of the surface, the probability is, that nine-tenths of them, at least, would be so high up that you could get your tile under them.

Mr. Benj. Buffinton, of Fall River. I should like to know how you would manage coarse, gravelly soil?

Col. WARING. I should not think it would be necessary to drain such land as that. Is the land wet?

Mr. Buffinton. The land is wet.

Col. WARING. Can't you tap that gravel somewhere, and get the water out of it?

Mr. Buffinton. That is the reason I would rather drain with stone than tile; you can drain so much deeper. You can dig larger drains, and have them farther apart.

Col. Waring. The distance apart has nothing to do with the size of the drain; if you put in a very small pipe, you will draw the water off from an immense area. Mr. S. B. Phinney, of Barnstable. I would ask the comparative value of stone and tile, side by side. I have used both. I commenced in Barnstable, some few years ago, upon some of the land belonging to the agricultural society there, and I found the stone cheaper than the tile. That was something like twelve years ago, and so far as the drainage to-day is concerned, it is considered better by the stone drains than the tile. Perhaps labor was somewhat cheaper at that time than it is now, but I should like to know how they compare in value.

Col. Waring. I should say that whichever kept open the longest was the most valuable. All you want of either kind of drain is to furnish an outlet for water, and the one which furnishes the most permanent outlet would be the most valuable. In the case to which you refer, perhaps the tile were of the crude kind, that were made in the early stages of the manufacture, and the probability is, they were laid by men who did not understand it, and the dirt has found its way in and obstructed the drain. A perfectly well laid pipe tile drain, with collars embedded in clay, seems to me almost as permanent as the land itself. I do not see any influences that can disturb it. They cannot be worn out by the water flowing through them; they are burned too hard for that.

Mr. Johnson, of Framingham. Do we understand that it takes a thousand feet of tile to lay an acre?

Col. WARING. It takes about a thousand feet to drain an acre, with drains at intervals of forty feet.

Mr. Johnson. You say it would cost \$25 for the tile, and that it would cost more than \$25 to lay the stone, if the ditch were dug, and the stone there by the side of the ditch?

Col. Waring. No; I mean that the stone being delivered at the side of the ditch, it would cost more than \$25 a thousand feet to make your ditch enough wider to accommodate a good stone drain, and lay the stone in it.

Mr. Johnson. I do not doubt that is true.

Mr. BUFFINTON. There is another thing I have thought of, and that is, whether more air could not be got into the soil by a stone drain than a tile drain?

Col. Waring. I do not think much air gets into the soil in any case, by reason of the presence of a drain. When the soil is full of water, and the water is drained away, of course air

follows it. But except immediately over a drain, I don't think there is much ventilation of the soil from it.

Mr. BUFFINTON. So far as my experience goes, over even a stone drain, the soil is more mellow than where no drain has been laid, and better crops are obtained. What is the cause?

Col. Waring. Perhaps it is more mellow merely because it has been improved by digging. I suppose crops have grown stronger there, and have sent their roots further each way, being stronger; then the decomposition of those roots makes that land richer, and enables more roots to grow there; and finally that becomes the most mellow and the richest land in the field, chiefly from the accumulation of organic matter from the decay of roots.

Mr. BUFFINTON. I have almost made up my mind, that if we work the soil and make it light, as Mr. Johnson said, as we do when we make an onion bed, it will be equal to draining it.

Col. WARING. I have no doubt of that, unless the soil is too wet to stay mellow.

Mr. BUFFINTON. I have thought if we would work our soil deep, and get it thoroughly mellow and light, perhaps there would be no need of draining.

Col. Waring. You cannot make an onion bed in wet land; in land that really needs draining. All the draining amounts to, is getting the land ready for making an onion bed of it. When that is done, I should not object to any amount of cultivation you choose to put upon it. We agree perfectly about that.

Mr. Johnson. I suppose that strong land that is underdrained, will last in grass much longer than a field that is not underdrained, with the same amount of manure.

Col. Waring. Undoubtedly. I believe that a well-drained soil, by suitable top-dressing, can be kept almost permanently in good grass. I do not believe that you can keep the best grasses many years in very wet land, no matter how much manure you put on it. They will gradually give place to wild grasses, that grow in the water. The meadows will grow up to rushes.

Secretary FLINT. In cases where drains have been laid, is it not almost a matter of necessity that the land should be subsoiled and cultivated very deep? That is to say, would there

be any advantage in draining, with ordinary cultivation between the drains.

Col. Waring. I think there would, sir. I think all of us who advocated subsoil ploughing so strenuously ten or fifteen years ago, must feel a little humiliated, in view of the fact that there are no subsoil ploughs used now. I don't believe subsoiling amounts to much. I believe you will deepen your loam more by draining than by subsoiling; and although there are undoubted benefits to be derived from subsoiling, I don't believe they are sufficient to pay for the expenditure of time and labor involved. You want to plant; you don't want to spend time in subsoiling.

Secretary FLINT. Is it not a mistake to get tiles that are too hard burned? Are not tiles that are soft-burned much better?

Col. WARING. Tiles that are soft-burned are liable to imperfections that hard-burned tiles are not, and I think it is questionable whether even glazed tiles, made perfectly impervious, are not good as others, because the joints afford ample opportunity for the water to get in. I forget the exact figures, but I think it has been shown in England that with drains laid forty feet apart, the fall of an inch of rain in an hour would be completely removed by the admission of two-thirds of a table-spoonful per minute at each of those joints, and that is a small quantity of water to leak through such a joint as you will have. The tiles I have used for the last three or four years have been entirely impervious; as much so as if glazed. I think they have answered a perfectly good purpose. They are much stronger and much more uniform in shape than soft-burned tiles. Soft tiles are apt to be bent and dented here and there. and so lessen the flow of water; but the tiles that I use, made by Boynton, of Woodbridge, N. J., are perfectly straight, pressed tiles.

Dr. Loring. The question that has been asked here, as to the difference between stone and tile drains is an interesting one, and it seems to me that it can be answered somewhat by observation, and somewhat through the experience of others. I have tile drains and stone drains on my farm. The tile drains were laid in 1857, and the stone drains were laid in 1861. There is not a stone drain open to-day; there is not a tile drain which is stopped up.

There is in Essex County a very famous farm, well known to those of us who reside in that section. It belongs to Major Poore, the Washington correspondent of the "Boston Journal," known as "Perley." He inherited the farm from his father, who spent a vast amount of money in drainage. There were no tiles then. This land was drained as early as 1815 or 1820, I should say. The field to which particular attention was paid was a large meadow of something like forty acres, through which a small rivulet trickled. Mr. Poore desired to convert it into a large grass field, and employed a Scotch drainer and ditcher to put it into condition. It was thoroughly laid with stone drains, as accurately and carefully as that experienced Scotchman could lay them. . You can stand upon an adjoining hill and overlook that field, and you can see to-day the lines of those drains by the water grasses that are growing over them. I don't suppose there has been a passage for water through these ditches for more than twenty-five years. I don't believe there is in Essex County to-day, on any piece of land that is fit to be drained (and I am saying now really what I mean), a stone drain that is performing its service properly and well. The reasons why, every man must judge for himself.

Now, we have certain land to be drained. Perhaps Col. Waring would lay down stronger rules with regard to the draining of land than I should. I don't think so much land needs draining in this country as we suppose. I conceive, in the first place, that a bog meadow had better be let alone. Muck lands I would avoid entirely, so far as drainage is concerned. I don't think they come within the range of farming business. especially if you have three acres of muck land and two acres of high land adjoining. I would devote myself to the upland and let the muck land go. I don't think that lands that are drained by natural slopes, unless for some reason the springs are high in them, require drainage, and for that reason, I find a great many of the farms of our ancestors produced enormous crops of grass, grain and vegetables without any drainage at all. There is a great deal of natural drainage in this country. I know that the lands which Col. Waring has, and some land which I have, need drainage. They are precisely analogous to the clay lands of Scotland and England, which are so well drained there by tiles. Those are lands fit to drain. The land

which I drained in 1857, to which I have referred, is a very fair specimen of the kind of land which is usually drained in Scotland, and so, I have no doubt, is the land which Col. Waring brags so much about in Newport, of which there is not so much in this vicinity. Draining clay land with tiles is a good investment. The best lands can only be drained with tiles, because they usually lie so nearly level that the inclination of a stone drain would be insufficient to keep the drain open, even if there were no other reason for filling it up. So that I would lay it down as a rule, that the best lands to be drained are soft clay lands, and the best way to drain them is to drain them with tiles. I have no doubt that is a good rule. And when I say here, what I have often said before, that on five and a half acres, drained with tiles fourteen years ago, I raised in one season, on 41 acres 181 tons of hay, and on the remaining acre and a quarter eighteen hundred bushels of mangold wurtzels, you will see what a well-drained piece of land will produce, when filled with manure. But there are warm, loamy lands, naturally drained, within five miles of my farm, upon which I could have raised exactly such crops, without either stone or tile drains.

So that it seems to me that it is clay land only into which you can insert tiles with profit, and that is almost the only land that can be drained with especial advantage in this country. With regard to strong lands, they are clay lands, generally, and they are usually filled with stones, larger or smaller, and in that case, it would be advisable to displace the stones in the best way possible, and take it for granted that when they are gone, the water will go out also, and then they will be naturally drained, too.

I was very glad to hear the remarks of Col. Waring. I have no doubt that there is a great deal of land, near the best vegetable markets, that can be drained with tiles to a profit.

Col. Waring. The remarks of Dr. Loring lead me to say one word more, and that is, that I do not believe it will pay any farmer to drain a single acre, if he does not need that acre; if he has another acre that he can make pay better than it now does by spending the money on that.

Dr. Loring. That is a good rule, which ought to be printed in large capitals at the head of every agricultural paper in the country.

Mr. Buffinton. That is my rule. In 1857, my father had an acre covered with stone. He wanted to clear that up, and he went to work and dug ditches eight or ten feet deep, and filled them up with those stones. There is no real outlet for the water from these ditches; but I have never seen a year when he could not get from two to two and a half tons of hay to the acre from that field, or large crops of anything else he wanted to raise. I want to know what the reason is. The water is there under that land, and at the lower end of the field, water will stand in a wet time. That is why I think the air has something to do with it. It seems to me there must be a circulation of air among those large stones. The spaces must be filled with something.

We hear a great deal said, and read a good deal in the papers, in regard to the time of cutting grass, and we are told to cut it early. I want to know when that time is; in what state the grass must be.

Mr. Johnson. I do not understand the gentleman as putting that question to me, particularly. If he does, I will merely say, that my opinion in regard to the proper time for cutting grass is in Mr. Flint's last Report.

Prof. CHADBOURNE. The only thing that I saw to object to in what Mr. Johnson said in regard to the time of cutting grass was, that he mentioned a certain time-about the twelfth of July. Now, according to my observation, there is a great difference in years in regard to grass, and I think if we are to adopt any rule, it should have reference to the condition of the grass, and not to a particular day of the month. I was glad to hear him make the remark that we ought not to mix early and late grass seed in sowing our mowing fields, because some grasses come so early to maturity, that if we allow the field to remain until the late grasses are ready to be cut, the early grasses will be unfit to cut; they will have gone to seed, and will be little better than shavings. So I think we should speak to that point—the condition of the grasses in regard to flowering and seeding. My opinion and belief is, that the best time to cut grass is just as it is blossoming; you might say, when it is well in blossom. The first thing a plant does is to elaborate the material for producing its seed. With some plants, a year is spent in that work. We have an instance of

that in the beet. The first year, all a beet does is to make the great reservoir, which we call the beet root, for supplying material for the seed the next year. But in the case of the grasses, the first thing for the grass to do is to elaborate the sugar, the starch, and the various materials for the perfection of the seed, and if we allow the grass to go to seed, all this material goes into the seed; and if we allow it to stand too long, the seed drops, and all or a great portion of the value of the grass is gone. Just as the blossom comes out, just as the seed begins to form, it seems to me is the time when the nutritive material which the plant furnishes is mainly in the plant, and is best distributed in the plant. That is my own opinion. I should like to hear the opinion of other gentlemen on that point.

Mr. Buffinton. Ten or fifteen years ago, before I commenced farming, I went over to see Col. Thompson, of New Bedford, who is my great authority as to the time for cutting hay. I went into his fields, and I said, "Colonel, how is it that you are able to mow your hay in the morning and get it into the barn in the afternoon, and have it just as nice and sweet as any hay?" He said, "I will tell you how. When I have a field that looks almost ripe, and that is green, I mow that." I said, "That is not what I want. I want to know how I shall be able to tell when to mow this piece and that." "That is easy enough to know," said he; and he went into the field and pulled up a spear of grass, squeezed it between his thumb and finger, and some greenish water came out. Then he pulled up another spear, squeezed it, and there came out a white, milky substance, and he said, "When your grass is in that condition, it is time to cut it." I want to know whether that theory is right. I have followed that rule.

Mr. Johnson. When I said that herdsgrass, redtop and clover, should be cut by the twelfth of July, I did not intend to be understood as fixing that as the precise date; but I do mean to be understood, that, in my opinion, no herdsgrass or redtop grown in the eastern part of Massachusetts, or say as far west of Framingham as twenty miles above Worcester, and as far east as Newton, should ever stand later than the eighth of July. I put it at the twelfth, because some seasons, as the professor has said, grass ripens a little earlier and sometimes a little

later. I have for sixteen years got my hay into the barn the day it was cut, and before that, I tried the experiment for seeral years with a few loads at a time, and tried experiment with salting, with the tightness of the barn, and the packing. I think I have learned it for myself, from my own soil, from my own stock, and from my own operations. Now, if any mu can show me a better lot of cows than I took to the New England show, that had been fed on my early cut and little dried hay, and show me that they had no more grain than mine have · had, I will give in. If he will bring forward a pair of horse. weighing two thousand seven hundred pounds, that will go from my place to Waltham, and will not vary five minutes from two hours and twenty minutes in making the sixteen miles. and show no indication of the heaves, I may begin to doubt if my hay is so good as I think it is. If it brings the heave on I shall begin to think it is poor. I have three horses, and the are as fat as does, although they work. I have a pair of bear? horses, that weigh over two thousand seven hundred pounds, and of course they are not so fleet as some of the small horse: but one of them, in particular, will trot ten miles in an hour, and has done it a great many times, and has never got the heaves. If he had had poor, musty hay, he would have been very likely to have been troubled with the heaves. A good many horses in my neighborhood have the heaves. I don't know how they got them, but I suppose it was because the! were fed with poor hav.

Three years ago this last July, a physician was at my place. He was not there by reason of any sickness, but of course he must have been a very sensible man, or he could never have been the successful physician he was; and he said that it was reported to him that I cut my hay and carted it right into the barn, without waiting for it to dry. I told him it was not so. He said he had been told that I cut it when it was half grown. I told him I cut it at the most profitable time. I took him was field and examined it in the way this young man (Mr. Buffinton) has described, by squeezing the sap out of the grass. Then I cut a little of this grass and let it lie a very short time. "Now," said I, "see if you can find any sap in that grass." He tried it, and could not find any. Here we have the science. I am not a scientific man; I lay no claim to any science what-

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ever; all I have got appertaining to science I have learned from experience; and that experience I have got from sheer necessity and nothing else. But I believe in science; I believe in God; and I believe that everything which emanates from him is Science, and that it is true. Science never lies. Anything that we see in science that is apparently erroneous is owing to our own erring minds; it is not science that errs. We cannot rely upon what is stated as being always scientific.

This grass to which I have referred was cut, a part of it, on the fifth of July; some of it stood until the fourteenth, from necessity, for want of help; and also, because, being a little timid in all these things, and neighbors and friends saying I should lose if I cut that grass, I thought I would test the matter; and I found that the grass that was cut on the fifth was much the best hay, and was worth the most money, I have no doubt; and that good doctor came to the conclusion, after looking at my hay, and seeing the grass and testing it, that the hay which was put in later would have been worth more than the cost of cutting, in addition, if it had been cut as early as the rest.

The reason I put it as late as the twelfth is, because I thought it might please some of the gentlemen here better than to put it earlier. I believe in cutting even earlier than that. I believe, as the professor says, that the time to cut grass is when it has elaborated all the different juices necessary to form the seed; not to wait until they have gone into the seed, because the moment the seed begins to form, that moment the lower part of the grass and the leaves begin to lose their value: begin to turn woody. My idea about cutting herdsgrass is that it should be cut the moment that the blossom makes its Clover I would cut as early as the second set of appearance. There are three sets of heads in red clover, and I heads form. would cut it at that time. If clover is cut in that way, there is no trouble in having it come out bright and nice. I sold a scaffold of hay this spring to the hotel keeper there, which was put in last year in pretty good season and not much dried. weighed well, a great deal more than he expected it would, and he said it was splendid hay. At any rate, there was no must in that hay; his horses do well on it, and like it. I think the

surest test of the quality of hay in a man's barn is to look at his cattle, and see the condition they are in.

Now, I believe not only in giving animals good hay, but good care, grooming them, keeping them well bedded, and feeding them properly. I grain my cows every day in the year,—not much, but a little. They are fleshy and in good condition, and give me a good yield. I believe, too, in draining a good deal of land, if a man can possibly afford it. It would be profitable, sometimes, to do what a man cannot really afford, if he only had the means; but most of us farmers are short of the means to do with. Sometimes we could do better if we had more means.

I will merely add, that I hold to cutting grass while the dew is off, and ploughing the ground when the dew is on.

Mr. Phinney. This subject was before the State Board for discussion, and I remember that we gathered a great deal of information from Mr. Johnson at that time. But it seemed to me then, that as the climate of Massachusetts and New England is variable, we could not easily fix any time, within some two weeks, as the best time for cutting grass. It seems to be generally admitted, that the season in the eastern portion of the State is, some years, two weeks earlier than in the interior, so that it would seem that the individual farmer was the best judge as to the time for cutting his grass. I formed the opinion, from the discussion which took place at that time, that we could come to no conclusion as to whether the first day of July or the fitteenth of July was the best time for the cutting of grasses. I think Mr. Johnson, at that time, came somewhat to the same conclusion.

Dr. Loring. I think Prof. Chadbourne has made a statement which should be considered with a good deal of care. It seems to me that an acre of grass in the hands of a farmer should be made the most of. What he wants is to get as much nutriment from that acre as possible. I have no doubt that herdsgrass can be cut before the head is on it, cured and prepared properly, and made into very nutritious hay. But it does seem to me, that every farmer will see in a moment that that is not an economical or profitable process for him to go into. Now, every kind of grass has just so much nutriment in it. You want to get rid of the refuse, the woody fibre, and

save the sugar, starch and soluble salts, that go to make up the nutritive properties of the plants. You must do that either by allowing your grass to stand until it comes to that point where there is the most of that nutritive property in it, or you must cut it before that time comes, and let that nutritive property be generated in the grass as it is dried and put into the mow. For instance, immature grass is very deficient in the nutritive elements that I have spoken of; every chemist knows it,—and the tests which have been applied to immature plants show that they are deficient in them. Now, you can generate or create these nutritive elements by cutting and drying your grass, but of course you get much less to the acre or half acre by producing them in that way than you do by letting the plant stand until it has arrived at that point where the woody fibre is the least, and the nutritive elements of the plant are in the largest proportion.

Now, I am sure that the time when the plant has reached that point of economy to the farmer, and of the largest nutrition to the animal which consumes it, is just exactly the point of time which Prof. Chadbourne has specified; that is, the time of leaving the blossom and going into the process of creating seed, and before the process of making seed has taken up all those nutritive elements of which I have spoken, and which presented themselves in the end of the stalk of grass out of which the milk was squeezed by the thumb-nail of the experimenter. That seems to me to be a good law.

Experience shows that we cannot lay down any definite time for the cutting of grasses. We have in Essex County, in the marshes, what we call black grass, and a very useful kind of grass it is. Black grass allowed to stand until the middle of July is comparatively worthless; cut when it is just in the condition I have described, which is generally about the twenty-fourth of June, it is about as useful grass as we have. Now, in our section, the period of time when it arrives at the point which I have laid down varies very much from year to year. This last summer, it was late; the summer before last it was early. A field which some years you could cut to a profit on the fourth of July, you could not cut to a profit another year until the twelfth of July. And so it is with other grasses—clover and herdsgrass.

Now, I think that is a law which every farmer can follow with a great deal of benefit to himself. He need not go into any chemical analysis; that he cannot do; it is impossible; but he can tell when it is just going out of blossom, and if he cuts it then, he will hit the exact point of time when he will get the most nutriment for his animals out of any given piece of grass, standing upon any given piece of land. That is the rule for all grasses. You cut, for instance, a large crop of rowen, which is entirely immature. You dry it, put it into your mow, and the process of drying and packing creates in it just what nature would have created if it had been allowed to grow long enough, and the season had been long enough. But every farmer knows that it is the most unprofitable thing he can put into his animal. An animal fed on rowen will make an abundance of everything else but milk or meat. It does seem to me that a good shorthorn cow could eat about half a ton in two days. perfectly well that she can keep at it all the time. There is no let up to it. The reason is, that the actual amount of nutrition in that grass is small, and the non-nutritious substances are so arranged that they pass right through her, and keep her mill going all the time. That is of no earthly advantage to the farmer, and it seems to me that is a thing we must avoid, and avoid entirely.

With regard to curing grass, I will not undertake to controvert what Mr. Johnson has said, because I don't know anything about it. I am afraid to cut my grass in the morning. after the dew is gone, and put it in in the afternoon. I had one curious experience, which I will relate. Black grass requires a great deal of drying. One year, I had over forty acres, and I cut it as fast as I could. It was when I was young and enthusiastic, and pitched in myself, and did a good deal of work in a day,-for me. Well, the grass was down, the weather was fine, and I thought it was dry, but the knowing ones said it wasn't. However, I said, "This hay looks well, it is in as good order as it can be, and I am going to fill my barn with this black grass,"—and I did. In about four days, I put my hand into that mow, and I had to take it out again pretty quick. I took it for granted that that black grass and the barn too would go if I did not work smart; so I had all that hay pitched on the floor, turned over, and put back again. I am

sure of this, that I had no hay of that description of which my animals consumed so much, or which seemed to do them so much good.

QUESTION. What in your opinion would that have been, if it had not been pitched over?

Dr. Loring. I don't know what it would have been, but I know I would not be so frightened again for any living thing. Mr. Johnson says that his hay is good. I have no doubt of it; but old-fashioned hay, made in the sun, is good, spends well, and goes a great ways. I do not say his does not. Perhaps both rules are right; one rule I know is; that I am satisfied of.

Now, in regard to the grasses. I have tried all of them. There are all sorts of grasses, but herdsgrass and redtop are the grasses; all the rest are only substitutes, in the long run, for these. You may hunt the whole catalogue over, and you will find nothing to equal them. Clover, Hungarian grass, etc., may answer as substitutes, but the best hay, the richest in nutritive qualities, that can possibly be raised on an acre of ground in New England, is hay that is made from herdsgrass or redtop, or the two combined, which is better yet. You may put your working oxen, your dairy cows, your working horses, or anything else, on to any other kind of grass, but there is nothing, in my opinion, that will come up to those two, cut and cured according to the rule suggested by Prof. Chadbourne, by which mode all the nutritive qualities of the grass, the sugar, starch and soluble salts, will be preserved, to meet the wants of the animal.

Mr. Johnson. I think the doctor, Prof. Chadbourne and myself agree entirely. I am very happy to find that we do agree, for I never disagreed from the doctor in my life, and I hope I never shall. I certainly shall not, if he always behaves as well as he has to-day. We all agree that the time to cut hay is at the time when it is at the highest point of nutrition. Now, I do not understand that Prof. Chadbourne lays it down as a scientific principle here that that time is when the redtop or herdsgrass is fully in blossom. I agree with the doctor that these two grasses are the most valuable ones we have. I believe that the time for cutting is just before these grasses are in full blossom.

Now, I am not scientific; I don't claim to be scientific; all I claim is, that a scaffold of my early cut and little cured hay, as I call it, will keep my cattle longer than hav that is so thoroughly dried as people used to dry it: Why, sir, where would this world be if there was no improvement? Where should we be, by-and-by? There must be improvement in cutting and curing hay as well as in growing it. I must think that some people here in our good old Commonwealth are a little behind, if they don't begin to see the improvements that are going on in the curing of hay, and particularly in the time of cutting it. Why, sir, I suppose that there are hundreds of tons of hay in Framingham that are put into the barn the same day that it is cut, and they cut very heavy crops of hay there, and cut very early. There is one man who cuts more than a hundred tons of hay, and his hay was in the barn this year before the tenth of July.

Again (and I hope the doctor will take particular notice of this), last year was one of the years in which we cut our grass early; year before last we cut it early, and next year it will be fully as important that we cut it early, because it has been so early these last two years. We have got to give the second crop a chance to come up and grow, and give us something to start upon. August is the time for our grass to start for the next year. Very little has started this year, and I think, therefore, that we shall come pretty short next year. I advised my neighbors this year,—and many of them agreed with me,to cut their grass rather early, with the idea that, even if we did not get so much grass as we should if we postponed cutting until later in the season, we should gain it by the grass getting a good start for next year. I am satisfied that many of us cut our hay altogether too late. And as for hay going through cattle and scouring them, as the doctor says, I have no trouble of that kind with my stock. I don't use much salt in my hay. I don't believe in salting cows very much; a little at a time, and often. But I do believe that the proper time to cut hay is when it has the most nutritive value, so that, when it is cut and dried, it may be the nearest like green grass. It is better for our cattle, they relish it better, and certainly they are pretty good judges.

Hon. RICHARD GOODMAN, of Lenox. When you, sir, drew such a vivid picture, this morning, of the condition of Fall River, showing to what a height of wealth and prosperity it had attained through its-manufacturing industries, I felt that agriculture had sunk below an immeasurable distance. But, sir, you failed to tell us of the difference between the profits of farming and the profits of manufacturing. I felt, however, somewhat relieved, when I began to consider the subject, by this consideration: that without the assistance of the farmers and the food which they supply, your spindles would cease to run, your mills would be empty, and the prosperity of Fall River would fade, "like the baseless fabric of a vision, nor leave a rack behind." I was reminded of the story of the organist, who, whenever he spoke of his instrument, always said, "You and I." One day, while he was in the midst of his music. the organ stopped. He turned round to the boy who had been blowing and said, "Why don't you go on?" He replied "I will go on, when you say we."

Now, having listened to this discussion on the hay crop, I begin to feel that we can say, with some satisfaction, this hay crop is to us farmers, what manufacturing is to Fall River. And, often as we have discussed it in the Board and elsewhere. although we do not arrive at a satisfactory conclusion about it. we do get some information. One of the most interesting points of this discussion is the question of the time for cutting hay, and I think that if the chemists and scientific men would study this subject accurately, acutely and scientifically, they might arrive at the precise day when our hay should be cut; but that rule would not apply equally well to all sections of the State. Take the western part, for instance, where we have a great deal to cut. We have to begin early and cut late. a long while before we can get all our hay in. We cannot always cut it when it is just in blow or just going out of blow. We want some general rule on the subject. And, sir, the value of this discussion is this: that it will tend to establish some general rule which we can try to live up to. It is a remark of an acute historian, Mr. Froude, that there are some laws which must be placed upon the statute-book, not that they can be carricd out, but that men may live up to them as nearly as possible. That same rule applies to the prohibitory law; it applies to the ten commandments. We do not abolish them because we cannot live up to them, but we want to live up to them as nearly as we can.

Now, this theory of Mr. Johnson's about cutting hay and putting it in the same day, although I have never tried it myself, I think may probably be successful in practice; and so I think the rule that we must cut our grass when it is going out of blossom, and before the seeds begin to form, is a good one. It is important for us to lay down these practical rules, because we want to live up to them as closely as we can. The farmers throughout the country cannot, as a general thing, stop to analyze, and go into all these minute particulars. What they want is some general rule on which they can rely, in regard to the time of cutting their hay.

Now, in my part of the State, a good many farmers still cling to the old-fashioned notions, and they will not begin to cut their hay until all their other work is out of the way. They get mowing machines and tedders, and all the new-fashioned implements, but they think they cannot use them until the hoeing is all done; they have no idea, apparently, that it is possible to carry on two kinds of work at the same time. That policy works more harm than anything else. Those of us who are in the habit of using machines, and managing this thing properly, can carry on our hoeing with one set of machines, and our having with another, at the same time. I noticed this year, when hay was very scarce, some of our farmers waited until after the fourth of July, until after hoeing was over, and the annual frolic over, before they cut their clover. Every one knows it is not worth one-quarter so much as it would have been, if it had been cut earlier; and not only has the farmer lost a considerable portion of a valuable crop, but he has put himself behind in getting his other crops. It will be a good thing if we can lay down a general rule as to the time when our clover crop should be cut. And just here I want to say, that so far as the cutting of clover is concerned, there is no more valuable aid to the farmer than the hay-cap, which is not much used in this country, but which in England is considered as indispensable to the farm as the hoe or mowing machine. If you have these caps, you can cut your clover at any time in fair weather, cock it up, cover it with a hay-cap, let it lie a

week, if you please, and take it in at your leisure. A man who has a farm of the ordinary size, one hundred or one hundred and fifty acres, if he begins his having before the fourth of July, will not get in his hay, with the amount of labor at his command, any too soon. I believe we get in our hay in just as good condition as the farmers do down here. I have seen them getting in hay with snow on the ground,-probably for convenience in getting it in on sleds. We are not quite so bad as that, and I am glad to say that we are improving in many respects. Our farmers are getting in their hay a great deal earlier than formerly, they are getting it in better condition, and our cattle are feeling the benefit of it. We in our section are largely engaged in dairying-sending our milk to market, making butter, and in every way using the products of the cow. This question, therefore, is one of great importance to us, because it is the hope of profit that actuates the farmer, and when he finds that he can get a larger production of milk by using the early-cut hay, he will be very apt to turn his mind to these new improvements. Not many years ago, my friend, Col. Waring, sent to me, and wanted me to make some experiments in relation to feeding early-cut hay to my cows. I was feeding a large number of thoroughbreds. At the same time, he sent to another man on the Hudson River, who was feeding late-cut hay. On comparing the results, he found that, with the same number of stock, I was getting a larger production, using only one-fourth as much grain, and my cattle were in better condition. My hay was cut the middle of July. My friend on the North River did not finish having until the middle of August.

Dr. Loring. I think my friend has laid down a rule that is a little hard upon the clover business. It is the fourth of July all over the country, but the latitude is different, and the growth of plants different in different sections. Clover matures faster in Southern Connecticut than it does in New Hampshire; than it does with us.

There is another thing. If you seed down a piece of land just before the frosts come (although as Mr. Johnson has properly said, August is the best time to sow herdsgrass and redtop), especially if it is heavy land,—I doubt, by the way, a little, the propriety of seeding such land in the fall,—it would

be well to sow upon that land, early in March, upon the snow, clover seed. Now that clover, sown in March, will not blossom until after the fourth of July; it will not start and grow and get into blossom by the fourth of July. Why not apply just the same rule to clover that you do to herdsgrass? There is a time when that plant is just in the condition that I have described the herdsgrass to be in when it arrives at the point to which Prof. Chadbourne has alluded. Why not take the clover at the same time, and cut that just when it is in rich blossom? I think that is the proper time to cut it; and I think, from the statement of Mr. Goodman himself, when you consider that the time when clover matures in different sections of the country is different, that that is all he meant by what he said. I think the rule I have laid down in regard to other grasses will apply to clover,—that the time to cut it is when it is in blossom, and not on any specified day. If we are going to have any particular day, don't let us, have Christmas or fourth of July; let us have Thanksgiving, for the governor can appoint Thanksgiving whenever he pleases.

Mr. Goodman. The doctor takes exception to the general rule. The general rule is, that all clover is ready to be cut by the fourth of July. Of course, clover that is sown in the spring is an exception to that rule. I think it is a great deal better to cut clover before it begins to turn brown at all. What I am most particular about is, that we get our haying started before this great national holiday, because the effects of it very frequently last four or five days, and before our workmen recover from them, it is too late in the season to cut our hay to the best advantage.

Mr. Allis, of Conway. I think the recommendation to seed down land in the fall is a good one; but I would like to inquire whether dry weather would not have a peculiar effect upon it so that it would not prove in the end any better or so good as if sowed in the spring. A year ago last August, my neighbors on the lands on which they raised tobacco, sowed wheat, and seeded down in the month of August. I left three acres, cn which I raised tobacco that same year, until spring, when I ploughed that land, harrowed it over once, then sowed my oats, harrowed them in, sowed herdsgrass seed,—nothing but herdsgrass,—and rolled it in. Last haying time, those neigh-

bors who sowed their seed in August, had a small crop of sorrel, and that is all they had, on highly cultivated land for grass. I mowed two heavy crops on my three acres which I sowed in the spring. I attributed their failure to the fact that the ground was so dry, and the drouth held on so late that their seed did not germinate.

Mr. Knowlton, of Upton. I have had considerable experience in fall seeding. I very much prefer seeding in August, but when the land is so dry that I cannot seed in August, I defer seeding until the last of November, so late that the seed will not germinate that fall. I have tried it three years, and I have had splendid crops in every instance. I tried rye in the same way, and had good crops of rye. I would not recommend this practice when the ground is in good condition to seed in August, for I believe that is the best time to seed, when the season is favorable. But my experience has been very unprofitable in sowing grass-seed on dry ground, or in hot weather; the drouth has killed my seed. I have some land now that I have got to turn over on that account. The grass crop is my crop; I am going to abandon the hoed crops; and my success has been good in seeding even as late as the last of November. I have not had a failure, either in rye or in grass. The weeds trouble me more in the spring with the late seeding than if I sowed in August. I put on my harrow, sow my seed, put on my bush harrow and the roller, and my grass gets up so that it overpowers the weeds, and I have no trouble in the spring, but when I sow late, I do have some trouble with the weeds.

Mr. Boise, of Blandford. Mr. Knowlton says he has given up the hoed crops. We in the western part of the State cannot compete in raising corn. Grass is our crop. Then the question comes, How shall we revive our lands where the grass roots have been killed, without ploughing? My own practice has been,—and I have been very successful,—to top-dress, put on the harrow in the fall, and tear up the turf. Then I went on and sowed herdsgrass late in the fall, and in the spring, in the late snows, I sowed clover. My neighbors thought I was spoiling my land, and that I should not get any grass; but I have, in four years, more than trebled the capacity of my farm for the keeping of stock. It was all run down when I took it.

There is another point in regard to getting hay in. I never want but one day to make my hay, and I cut three tons to the acre. I cut one day, and get it in the next. But there are exceptions. If we have had a rain, there is more moisture in the ground, so that the hay will not dry so quickly, and the juices of the grass will not be absorbed so readily. I think that point should be taken into consideration.

Mr. Alls, of Conway. In our Connecticut River Valley, you know that our special crop is tobacco; but our farmers have got into the habit of sowing wheat somewhat, and they are raising very good crops—thirty or forty bushels to the acre. They seldom, if ever, plough their ground, after the crop of tobacco is taken off. They merely take a cultivator and run it over the ground until they get it about level, and then sow their wheat and roll it down. Those who have tried this plan, think that their seed is more likely to catch, and their wheat also less likely to winter-kill than if they ploughed.

Mr. Allis. I can only say for myself, that I have had better success, after tobacco, in having my grass come up strong and heavy, than I ever did before. I have been told again and again, that I was ruining my farm by raising tobacco, but I have followed it twelve years. I have turned over about half the land that I used to mow to pasturage, and I get a great deal more hay than I did before, and of a better quality. I never put tobacco on any piece of land more than two years in succession. Then I seed it down, and follow it up.

Mr. Buffinton. How is the manure heap?

Mr. Allis. If it is not as big, I endeavor to make it as big. I aim to have it as large as possible.

Adjourned.

## EVENING SESSION.

The evening meeting commenced at 7½ o'clock. There was a large audience in attendance, among whom were many ladies.

The CHAIRMAN. I have the honor of introducing to you this evening, the Hon. Wm. B. Washburn, the governor elect, who will preside on this occasion:

## REMARKS OF HON. WM. B. WASHBURN.

Mr. President and Gentlemen of the Board:—It has given me great pleasure to be with you to-day. With some of you, I have been acquainted for years; others are comparatively strangers. I need not add that I have been not a little interested in the exercises thus far, and especially with what I heard in reference to this county. I had heard of it before, and thought I knew something of it; and when your good chairman presented the facts and statistics, I listened to him with deep interest; but when he informed me afterwards that he had given us only about one-half of the facts, I really felt that I should go back with the conviction that I had known but little of this good county, and feeling a deeper interest in it than I ever had before.

But it is not my intention to take any of your time. I know that you are all waiting to listen to him who is always ready, and who this evening has to present a subject of deep interest to you all. I therefore take pleasure in introducing to you Prof. Chadbourne, who will now favor you with his address.

## UTAH AND THE MORMONS.

## BY HON. PAUL A. CHADBOURNE.

Mr. President and Members of the Board:—We have in the midst of our country a peculiar people. They have religious views which we should not accept, and they certainly have some practices which I presume we should not be inclined to adopt. But it is an old adage,—so old that it is written in one of the dead languages,—that it is lawful for us to learn even from an enemy. It is certainly lawful, right and desirable that we should learn from every great experiment that can be tried in our country; and it does seem to me that this American continent, the first one to come up out of the waters of the ocean, and the last that received civilized man, is the great theatre on which the grand experiments of the world are to be tried. We have had many tried here; many in government, many in religion, and others still remain to be tried; and the Mormon people, despised by many, and, as I believe, a much-abused people, are trying an experiment to-day, and have

been trying it for twenty-five years. The results of that quarter of a century of labor are worthy of the study of every man in this country.

In order to understand the exact conditions of that experiment, it is necessary to say a little of the people and something of the country as they found it; and then to speak of the results of their industry. I speak of their work as an experiment, a wonderful one, and one from which we can learn much, because it has been tried so far from all other communities that its results can be exactly ascertained. The work that has been going on in Salt Lake Valley, and throughout the valleys of Utah, has not been affected, and cannot be affected, by any work done in the Eastern States, nor by any done in California. It stands by itself. Therefore, all those peculiar changes of which I shall speak to-night, you will understand are the result of the work of the Mormons within that fine belt of mountains, the grand Wahsatch, that surrounds the valley.

We are to remember, also, that the people are not, as a whole, the best kind to try an experiment. The Mormon religion is of such a nature, that it would be impossible for a Mormon to come into Fall River, or into Boston or New York, and collect a great number of followers. It is so peculiar, that it requires a particular class of minds to receive it, and therefore they find only here and there one, all over the world, who will receive it. But their system is such that when they do find one, in England, in Scotland, in Wales, in Denmark, in Norway, in Sweden, or in any other portion of the world, who receives that religion, they bring him over, if he desires to come, to Utah, -- to Salt Lake City, -- to the "Zion" of the "Latter-day Saints." Therefore the Mormons are a people who have been gathered out of many nations, and are in every sense of the word a peculiar people. And especially so in this,-I do not speak of it as a matter of disparagement at all,—that the mass of them have been gathered from the lower ranks of society. There you have a hundred thousand people brought together from different portions of the world; brought together from the lower ranks; many of them poor, ignorant, coming there in great poverty, and commencing that experiment under, you might say, the most adverse circumstances. We are to remember all this in considering the results of that experiment.

Now let us look for a moment at the land which they inhabit, and see how they found it. Just think of our land. If we get into the cars in Boston, and go on day and night, day and night, and yet day and night, we begin to have some appreciation of the extent of this wonderful land of ours. But after we have crossed the Missouri River, having gone fifteen hundred milesfor you are not fairly started towards Salt Lake until you reach Omaha, and have found the Union Pacific Railroad-we start from there, and, gradually rising, find at once that we are in a different region. The herbage becomes short. It is a treeless region, except where the water-courses are. We go still further, and the grass disappears. As we go on, mounting higher and higher, we find ourselves passing at Sherman, nearly two thousand feet higher than the top of Mount Washington. Take "Greylock," the highest point in Massachusetts, and take up another "Greylock" right from the ocean and pile it upon the top of "Greylock," and then far above that the cars will be moving, as we find them at Sherman. So that the valleys among the Rocky Mountains are vastly higher than the highest land we have in Massachusetts. The lowest point in the valley of Salt Lake is over four thousand feet above the level of the ocean, so that if we could sweep everything away from it, Salt Lake Valley would stand as a lofty mountain as compared with the general level. But as we pass on, we come to lofty mountains-the vast range of the Wahsatch. Deep rifts cut through them, called "caffons," through which we pass, and as we look up on either side, we see immense limestone walls grooved by the old glaciers that have left their marks upon the solid layers of quartz. And then we see the streams rolling onward as they have rolled so many thousands of years, and carrying down, east and west, into the central portions of the continent, the water from the snows that have fallen on those mountains.

We have here what is called the Great American Desert; and the question arises in our minds, constantly pressing itself upon us as we go on, hundreds and hundreds of miles across this desert, Is it possible that this land can become anything more to the American people than just so much solid earth to hold the world together? Is it worth anything? Acres and acres, miles and miles of sage-brush, so called, that is, a kind of wormwood, that will only grow where water seldom if ever

falls, and where little else can flourish. What is the cause of this desert? We find at once that it is over-drainage. is probably some land that needs to be drained; but the great mass of it has been over-drained. Salt Lake Valley is a good example of this sort of land. You see on the way through this desert the marks of an immense number of old lakes, probably most of them of fresh water, although the great lake of Utah Valley is now salt, as I shall explain. From the central position of our country, we find rivers rolling to the east and west and carrying off the surplus water; and those rivers, rolling on for thousands of years, have worn deep channels through the rocks, in some instances a thousand feet. Lieut. Powell told me that, going down the Colorado, he could count almost the whole of the geological series where that river had made its way down through the solid strata. These rivers, running east and west for thousands of years, cutting their channels deeper and deeper, have cut through the edges of many of those lakes and have drained them. And they are the vast drains, taking out from the centre of our continent the waters too rapidly, and carrying them to the Atlantic Ocean on the one side, and the Pacific Ocean on the other. And therefore we have this vast region, the American Desert, so called, which is over-drained; so that trees and plants that require water can only grow around the mountains, and in certain places in the valleys where the waters from the mountains accumulate. The great mass of the land is a barren waste, covered with the sagebrush that marks the desert.

In Salt Lake Valley, and all around that region, we have a country which is not drained at all into the ocean. How does it happen, then, that this becomes such a barren waste? It happens just in this way:—that the water, being drained off towards the Atlantic on the one side and towards the Pacific on the other, we have here a basin that can receive water only as it comes from the mountains on either side; and those mountains upon either side condense the water from the clouds before it comes over that great valley; it is deposited in the form of snow upon their summits, and as it melts and rolls down into the valley, we should expect, of course, that the valley would in time become filled with water. That is not the result, however; because the wind that comes from the south in the sum-

mer, sweeping over the barren sand that in the daytime is heated up almost to the burning point, becomes so hot and thirsty that, when it sweeps over this valley, it just takes a shaving of water from that lake and carries it over the mountains, to be deposited on the other side or carried further north. That process is carried on all summer, and it is so rapid that water enough never falls there to cause the lake to rise so that it can roll over the high ridges of the mountains and be emptied into the ocean.

When the Mormons came into Salt Lake Valley, the evaporation from the valley was just equal to the water that gathered in it from all sources, so as to leave as a residuum the old original Salt Lake, which was nearly one hundred miles long by forty wide. And it was salt as salt water could be; for the reason that the streams that come down into that valley formerly flowed over salt beds-some of them perfectly solid masses of salt, so that it can be quarried as you do granite. You may take out immense blocks of salt, in some places, and look through them as you do through window glass, so clear and beautiful are they. Salt Lake having no outlet, the water and salt which are carried down there remain in the lake, except as the water evaporates; and although to-day Salt Lake undoubtedly contains nearly twice as much water as it did when the Mormons went there, it is still so very salt, that in the spring of the year when the water flows into the shallow places on either side, and afterwards dries up, you can shovel up just as much as you please of the most beautiful salt.

Now I have touched upon a point upon which I must enlarge right here. I say that Salt Lake contains nearly or quite twice as much water as it did when the Mormons came through Emigration Canon, and, coming in sight of the lake, burst out into the song—"Now Zion's banner is unfurled," thinking they were led there by God, and determined to fix their homes there. This valley presents a problem in physical geography; and I want to make a statement respecting it, because the experience of the Mormons will perhaps serve to correct some of our opinions in regard to physical geography, and will suggest some problems for us to study upon. I do not pretend to explain all the changes that have taken place in this valley; but I will give the facts. That great lake, one hundred miles

in length by forty in width, has risen regularly one foot at least a year, for the past ten years. The water in that lake is now ten feet deeper than it was ten years ago. Now, if you take ten feet from the surface of that lake,—as it extends over so much of the country, it has eaten up immense quantities of land every year,-I say, if you take ten feet from the surface of that lake to-day, I have no doubt you will have nearly as much water as in all the lake underneath, because it is a comparatively shallow lake; and the portion underneath occupies so much less area, that I think I am perfectly safe in saying that the water is twice as much as it was twenty-four years ago when the Mormons came there. If we look up on the side of the mountains, we see the old beaches where the lake once wore its way into that solid rock, showing that where Salt Lake City now is, was once deep down in the water. The lake is now slowly rising, and if the process that has been going on in the last ten years should continue, the time will come when the Salt Lake problem will be solved; it will be in a state of perfect solution; for the water will rise and wash far above it on the mountain side. But it is not in Salt Lake Valley alone, or immediately around the lake, but in all the valleys around there and throughout that territory, that the water is increasing in quantity. Capt. Stover, who went from the State of Maine, told me that ten years ago he cut grass on the borders of Stockton Lake, where now the water is forty feet deep. He said that then there were no fishes except small ones in the little streams there, and now there is a large lake, forty feet deep in the deepest part, and well stocked with large and beautiful fishes. When you pass up and down throughout the Territory, as I have done this summer, you will find evidence that in all the streams the amount of water is constantly increasing, and the Mormons regard it as a direct interposition of God. They think it a special providence in their behalf, and I do not wonder at it, when I see what it has done for their valley. Brigham Young's son once told me-not on a religious matter, but I could see that he believed in it as a religious matterthat he had just come from a certain settlement in the southern part of the Territory, where this increase of water was very manifest. He said that the water was constantly increasing, and new springs were bursting out. "Now," he says, "twelve

years ago they went down there and planted a little settlement; and they estimated the amount of water there was there, and our people have become very accurate and exact in estimating the amount of water required for the use of every family, and also for the raising of the products of the earth. We calculated there was water enough in that place for twelve families, and we located them there. I have just returned from there, and there is a population of fifteen hundred souls, and an abundance of water for all." I could see at once the effect upon his mind.

Now, this increase of water is a part of the problem that we have to consider. Let us see exactly what has taken place. I saw it stated in a paper within a very short time, that Prof. Henry has made the statement that the observations compared at Washington for the last twenty years have shown that the cutting off of the forests does not affect the rain-fall, as has been popularly supposed. Now let us see if we do not get something here that bears upon that point. Perhaps he is right about it, and perhaps we have not looked in the right direction. I am much disposed to think we have not.

What have the Mormons been doing to increase the amount of water? Let us look at that question first, and then we have some other aspects of the case to consider. Certainly one thing they have been doing is to cut off the wood through these canons. Not only have they been cutting it off very rapidly themselves, but fires have gone through there and burned up immense quantities, so that the number of trees around Salt Lake Valley is very much less than it was when the Mormons went there. We certainly cannot then attribute the increase in the water to the trees in the mountains or in the casions. The water almost entirely falls upon the mountains and runs down into the valleys. The water falls mainly in the form of snow in winter, and this snow finds the streams that flow into the valleys. In my opinion, the increase of water through all that Territory,—and I wish to say here that I am now touching upon a point that I do not feel certain about at all; the facts I am certain about, because I have seen them; I am now touching upon theories, and perhaps against those theories which have seemed to be well established,-I say it seems to me that the increase of water throughout the whole of this valley (and of course the increase

of water throughout this valley has an important bearing upon our ability to use the rest of that land through the Rocky Mountains)—that increase, I say, depends not upon the greater fall of water, by any means, but upon the prevention of evaporation. Now let us see what the condition of things was when the Mormons came there. Here was this immense valley, most of it a barren plain, so that in the summer time it was so hot that the winds came over it thirsty and ready to lick up the waters and carry them over the mountains, and the water that came from the mountains and through the casions came down in streams which made their way with the greatest rapidity to Salt Lake. There was that lake and the streams, there being no trees or anything upon their banks to prevent evaporation, all exposed at once to the hot wind that came from the south, which, having no trees in its way, swept along very rapidly, and constantly carried this water off. Now let us see what the Mor-They stopped this water coming out of the mouths mons did. of the casions. They dug canals all along the base of the mountains, and, instead of allowing it to come down into the lake, they carried it along in the canals, keeping them all the time full, and then they tapped them in a hundred places, taking the water along in rivulets, making this whole land like a sponge, and not allowing the water to go down into Salt Lake until it had permeated the soil. Well, you say that so much water is apparently lost,—that Salt Lake, having so much less water coming into it, would be so much smaller. But these canals go through land that is now covered with herbage of every kind, and rows of cotton-wood trees and other trees, which shoot up as if by magic. And that is not only the case in the comparatively small territory about Salt Lake, but all through that valley. Most people who have visited Salt Lake City for a few days, come back thinking they understand the whole Mormon question. The truth is, they see but a small sprinkling of the Mormous there. They ought to go down through the Territory one hundred or one hundred and fifty miles, and find out what they have done. We find now the valley through this entire Territory, instead of being a dry, barren plain, over which the wind used to pass so rapidly, a country covered with vegetation, with grass, with corn, with grain of various kinds, and with groves of trees, so that the wind, in the first place, moving up

through the valley, is checked by the trees, and when near the surface of the earth, it probably does not move up the valley with half the rapidity it did. And then remember that, on the surface, instead of passing over hot, barren sand, it passes over fresh herbage, so that we have all through that valley a layer of air that moves comparatively slow, and at the same time is charged with moisture, so that, when it strikes the great Salt Lake, instead of being a rapidly moving current of air, hot and thirsty, it is moving comparatively slow, is nearly saturated with water, and has no longer any ability to take up the waters of the lake as it formerly did. Therefore the waters accumulate, and so over the whole surface (and this is true of all these places) evaporation is prevented by the introduction of trees to prevent the rapid movement of the currents of air, and also by covering the whole surface of the earth with this vegetation. That is my explanation of the increase of water in that valley. It is not that any more water has fallen there,perhaps not so much, certainly not any more,—but I believe it is because the water is saved.

But there is one thing that may seem to bear against this theory. It is asserted by the Mormons-I cannot say whether it is so or not-that the rains are more frequent in Salt Lake City than they were twenty years ago, when they first came there. That would seem to indicate that more water falls there. Let us look at that a moment. I have been over this country, back and forth, eight times, and have spent two seasons there, and I have watched this thing very carefully. The rains they speak of as falling in Salt Lake City and around there, are showers; and I have noticed this respecting them, that the clouds are generally of small extent and hang very low. Every shower that I have seen there has apparently commenced within the mountain ranges. It appears as though these showers are formed from the vapor rising from the valley, and condensed by the cold currents of air that come over the mountains. there is a larger evaporating surface and less movement of wind near the surface than formerly, more vapor accumulates in the air than when the country was bare of vegetation. The water that falls is not directly from the Atlantic or Pacific-in that case it would be a real addition to the water in the valley—but

is just the coming back of what went up, instead of its being carried over the mountains as it formerly was.

Then there is another thing which is very interesting connected with this problem which they are solving; and that is the change of climate. I notice that, in giving a report of a lecture that I gave the other night, the papers mixed things up a little, as they sometimes do. They reported me as saying there were formerly frosts every month in the year in Salt Lake City. It may be true, but I didn't say that. What I did say was, that there are parts of the valley where formerly there were frosts every month of the year, where now they can raise corn and the most tender vegetables with the greatest ease. No trouble from frosts at all. The frost was so common in the valley, that when the Mormons came to Fort Bridger, and old Bridger asked where they were going, and they told him they were going over the mountains to live, he said, "You may as well go back, for you will find nothing to eat." They told him, "We have got the seed that we're going to plant." "Plant!" said he, "I'll give you a thousand dollars for every bushel of corn you raise there." It would take a large treasure to buy at that rate the bushels of corn that can be raised in that valley now. In San Pete County, especially, one of the first settlers who went there told me that, every month in the year, they had not only frosts, but quite severe frosts; but when I was there this summer I saw all the agricultural products that man could desire, raised in the greatest abundance. How is this to be accounted for? Why, this same condition of the country that rendered evaporation so rapid when the Mormons first came there, caused radiation to be excessive the air was perfectly clear nearly all the time; it was free from moisture, and therefore, when the sun was down, radiation took place with very great rapidity. The surface became cold, and the frosts were severe. But now their process of bringing the waters down from the mountains, making them fill the whole land and cover it with vegetation, causes the moisture to rise up in the air; the cold air from the mountains condenses that moisture, and that protects the surface of the earth like a covering, and therefore the frosts are prevented. It is perfectly plain to me why they disappear, although many of the Mormons look upon the change as a miracle. It is a wonderful illustration of the operation of

those laws of God which control the whole universe; and when we do what we ought to do, accept that curse of labor which is a blessing as we are now, the very elements respond to our work, and meet us almost half way, if we only know how to meet them and take advantage of them. Here, then, in this valley, where Bridger said he would give a thousand dollars for every bushel of corn they would raise, we find that the water is becoming more and more abundant every year,—that the frosts are driven back, -so that many parts of that valley are like the most cultivated parts of New England; and in a very few years I believe it will be the best cultivated portion of our land. So much for the physical geography of that country, and the changes which have taken place there. The study of those changes will be of very great advantage to us, for you will see at once that the solution of this problem will enable us to judge of the value of immense quantities of land through all that mountain region. That is a matter of very great importance; not, perhaps, because we want so many more acres of land, but because of the desirability, as was stated here this afternoon, of raising the various articles of food where we want to consume them. When the lumberman goes into Aroostook County to cut down his trees, he must eat; and if you can raise his food there upon the ground, you make it better for the lumberman and better for the farmer. Now these ranges of mountains are perfectly filled with metals. It is the most wonderful country in the world. And it is of very great importance that, in connection with such immense mineral treasures as those mountains contain, we should be able to know that in every little valley where the water from the melting snow runs down and gathers in springs or in small lakes, if we will take hold and cultivate the land, we shall find the climate continually growing better, and the water increasing in quantity, so that we may have near the mines the very things which the miners want to consume.

Here is one of the things which the Mormons have done: Twenty-four years ago, last July, they first saw Salt Lake Valley—most of it a perfect desert. They came there in poverty, came there persecuted; for, whatever we may say of their religion, they came there a persecuted people, and in the greatest poverty. As some of them told me, they had to go down

in the lowlands and dig thistle roots month after month to They came there in that condition, and now we have that whole valley teeming with flocks and abounding with com and the finest fruits that grow anywhere; all prepared beforehand for those mines that are now opening with such richness all through those mountains. If you take up the papers you will see very severe things said about the Mormons, because they refused to let their people go into the mines. It is said that they kept them from mining, kept them from riches, etc. But when I look at that people as they are, and remember what they were, and how they came there, it seems to me that the Mormon leaders did not only the wisest but the kindest thing they could do. Suppose they had sent those poor, ignorant people into the mines searching for minerals in the days when they hadn't enough to live upon in the valley, what a poor, miserable set of men you would have had all through that valley! The leaders said, "Your first duty is to cultivate the earth, to raise crops, and lay up a store of corn and wheatenough for yourselves and your families." They insisted upon that, and the people followed their advice. I do not believe at all in the Mormon system, you understand, but I do believe in the wisdom of that advice. I believe that the people are richer and happier by far to-day, in consequence of having followed that advice, than they would have been if they had spread through those mountains, digging—they knew not for what; and left the valley as it was—a desert. They would have been doing the most unwise thing, and we should have had pestilence and famine instead of the plenty we see now everywhere. Now the time has come when the mountains can be dug from top to bottom, for food is abundant and cheap. The finest wheat that ever grew is raised in San Pete County, and sold for half a dollar a bushel.

Perhaps I should say something in regard to the Mormon mode of cultivation. Of course, they depend entirely upon irrigation; because, when I say that water sometimes falls, you understand that it is not enough, by any means, to insure crops. No crop can be produced, in most of that country, without irrigation. Therefore, no land can be cultivated except that which can be irrigated; and in order to be irrigated, it must have a certain relation to the streams that come out of the

mountains. But it happens, in a country which is made up of mountains and valleys, that almost all of the land is so situated.—the great portion of it is so situated,—that water can be brought upon it. There are benches or old beaches running along the mountains and sloping towards the valleys, and by digging large canals on them, and then by tapping these with small canals, you can bring the water down upon the valley for irrigation. This is a thing that could not be done except under a system of organized labor; and here we have another thing which is worthy of consideration,—I don't believe in the Mormon system which does even this, because I believe man should be independent,—but here is coöperation; and I believe in the principles of coöperation. It is to be a great thing, and we have not begun to study the subject enough. The cooperation here is under the direction of a leader—just the same sort of cooperation that there is in an army when it has a general at the head of it who commands his subordinate officers, and his officers command the privates, and every man has to go just where they say. That is mainly the sort of cooperation there is among the Mormons. know that in such a way you get an efficient army, and in this way they have secured great efficiency in working out this problem. Labor is organized throughout the whole extent of that Salt Lake territory in such a way as it is not organized in any other part of our land. You have Brigham Young, that old, stalwart fellow, whose nod moves all Mormondom, and who is nobody's fool; with a big head and bigger neck, a jaw like a lion, and whose will few can withstand. He has an eye also for business. He is a shrewd business man; a man of sound judgment in all temporal matters. Of course, he makes mistakes, like all other men; but, take it by and large, Brigham Young's judgment is as good as that of any man that can be found. And he has wrought out results in agriculture, in railroads and in telegraphs, of such a nature that it may be said there is no man in this country who has equalled him with the same means. He sets in motion the whole of this machinery, and then there are men under him, in subordinate places, setting in motion the machinery in smaller circles, so that, in every settlement, they have a bishop, and the bishop is not only the spiritual leader of the people, but he looks after temporal matters. He is the man to whom they all go for advice; he receives directions from headquarters, and everything goes according to his will. In this way, you will see that these people, although they may be ignorant, although they may be brought in by ship-loads, and distributed among those settlements, are set to the work they can do the best. The whole thing is organized, and when you go up and down through the Territory, see what they have done, see the amount of labor that they have thrown away, in one sense, in building those great forts to protect themselves and their cattle from the Indians, the roads they have made, the canals they have dugwhy, there are four hundred thousand rods of these canals, besides those minute canals or ditches that lead the waters to every field; really the work they have done is astounding,when you look at all this, you see that nothing but persistent industry, under a most perfect organization, could have accomplished what has been accomplished in that Territory in the time they have been there. I don't believe the world can show another example to match it. That is an important lesson in regard to what can be done by cooperation. If we could have something that acts spontaneously from the people; if we could have that people or any other work together for the common good, one hour's labor would be worth what two are now. Besides, when you find a people organized like that, they bave no time for mischief. Everybody works. When you go away from Salt Lake City down into the Territory, you cannot find any tobacco nor liquor. They do not believe in either. When you take a people like that, temperate, working all the time, and saving, and all working under an organization, you see wonderful results. Poor as they were when they began, and bringing in multitudes of poor people all the time, they are still a comparatively rich people.

The most perfect cooperation is to be found in this water system. The people live in villages. And here is another wise thing. They do not make a farm here, and put a house on the corner of that, and then another farm there, and put a house on the corner of that, and so on; but they put their houses pretty near together. And then their farms are not large: they cannot have large farms on this system. There can be no skinning, where you have to irrigate every foot of land you cultivate. It is condensed husbandry. Here we get another

good thing. Each one can have only a small amount of land, because it must be watered, must be carefully tended, and every single inch must be made to produce all it can. The houses being near together, the people can get readily to church, to the school-houses, and to the places of amusement.

Then comes the time for letting the water on to the crops. From the large canals many small canals come down by each man's land. There must be enough of them, so that each man can have control of one of those canals long enough to perfectly irrigate his lands. That is the problem; and the best men in the community arrange this matter-determine where the canals shall go, how long the water shall be taken from each canal, where it shall be brought in order that the land may be perfectly irrigated; and they decide that such a man can have the water so many hours to-day, and so many hours three days from now. Every man knows the time when he can turn the water on his land, and when it must be turned off; and no matter whether it is midnight, or cock-crowing, or any other time, when that moment comes, he must be ready to turn the water on his land. And not only that, but before that time comes, the ditches must be cleared out, and everything arranged, so that, when the water is turned on, it will go where it is There is no time to lose. The whole system makes men warv and watchful, makes them look out beforehand. A man knows, for instance, that to-night, at twelve o'clock, he may turn the water on to his garden for three hours, and that when it has run three hours, his neighbor can turn it on to his garden, and if he oversleeps, his garden must go dry; there is no help for him. Or if his ditches are not prepared, so that the water can run along readily, his crops must suffer. You see, the man must have everything in readiness, the ditches all arranged properly, and when the time comes, he takes the water from the large canal, and it passes along through the smaller canals in his grounds the length of time that is allowed him, and then the next man takes it. It is so arranged that each man shall have enough for the particular crop that he raises. Nothing but the most perfect cooperation, under a rigid system, could possibly control that thing, among so many people, and with so many interests, when we consider what human nature is ;—and I have no doubt there is quite as much human nature

among the Mormons as there is among other people. We have seen some instances of it, at any rate.

You see, then, that the drouth and the frosts they have managed to conquer, to some extent. There is almost always some enemy that is very difficult to conquer; and they have had two enemies there: one is the crickets, and the other the grasshoppers, or the "hoppers," as they call them. The crickets, which came first, they have little trouble from now. They are large, black insects, almost as long as your finger, which came down from the mountains in vast numbers. even the first year the Mormons commenced their work there, and they would have eaten up almost the whole of their crops, if they had not turned out in full force, to destroy them. Fortunately, these insects do not fly, and the Mormons dug ditches around their crops, and the women and children stood with mauls and killed the crickets as they fell into the ditches. In this way they destroyed myriads of them. Now occurred a curjous thing, that they deem a miracle. When these cricker were so very numerous, there came a bird, in immense numbers, and made war upon them. They call the bird a kind of gull. I have never seen one, but I think it is a gull, or some bird of a similar character. They came, as I said, in immense numbers, and covered the fields. And it seems as though they were made to destroy these insects, for not only would they est them greedily, but as soon as they were filled, they would throw up what they had eaten, and eat again! They would stand from morning till night killing those crickets. This is vouched for by many persons; and in their books they refer to it as a miracle. As there was no flock of crickets when I was there, and the birds do not come except when the crickets are there, I did not succeed in securing a specimen. The Mormons consider it a kind of sacred bird. One of the most intelligent of their number said to me, when I told him I wanted to get one of these birds, "You could not do anything that would be a greater outrage to the feelings of the old Mormons, who came into this valley first, than to kill one of those birds."

But they have, as I said, another enemy,—the "hopper,"—which they cannot get into these ditches, because they fly in such numbers as really, at times, to darken the sun, like a cloud passing between the sun and the earth. Some facts will show

you the number and the voracity of this insect. This same Mormon told me that the first time they came upon his land, he had a piece of corn planted in a place that I know very well, by the mouth of the canon, and it was just coming out in tassel. They do not wait until the corn or the grain gets a little hard; they will not injure it then; it is when it is in a soft and succulent state that they attack it. He said that they came to that piece of corn one morning, and the second night after, there was not a single particle of it to be seen. They had not only eaten off every leaf and stalk, but eaten the roots down into the ground, so that the land looked as if no corn had ever been planted upon it. He said, and others have told me, that they have seen one of these flocks come on to a wheat-field in the morning, where the wheat was all headed out, and at night not a vestige could be seen in the whole field; it had been gnawed down into the very ground, just as far as they could find a particle of the plant. And they sometimes not only destroy the first crop, but a second and even a third. They will come upon a fruit-tree, and not only eat every leaf, but they will take every scrap of bark of that year's growth, so that the twigs stand out perfectly bald and white. Sometimes there comes a strong wind and drives them down into Salt Lake, in such quantities that the waves throw them up in perfect winrows, as you see the kelp thrown upon our seashore. Seeing them remain there, year after year, in such masses, gives us some idea of the vast accumulation of animal remains in geological times—we see how such immense masses of animals could be pressed together in some places, when we see such a vast accumulation of these grasshoppers pressed together around this lake.

There seems to be no way to get rid of these pests, because, when they have eaten up all they can find in the valley, they go up on the benches,—dry, hard sand, where nothing will grow,—and there they deposit their eggs. There is no way of getting at them, to destroy them, and the eggs hatch out the next spring, and after a certain time they come down and repeat their ravages. Of course, there are certain times when the season is unfavorable and kills them off, and the Mormons say that they can generally tell the fall beforehand whether there will be any "hoppers" in any given locality the next year. If

a flock comes over and begins to deposit their eggs along the benches, they know what to expect the next season.

This is one evil against which they have to contend. If any one can prescribe a remedy, he will do a great service to that country.

Just before I came on to this platform, some one remarked that he supposed I was going to talk about the Mormon religion. I told him that was not in the programme, but, at the same time, I could manage to throw in a few words in regard to that. I do not believe in their social system which grows out of their religion,—I speak of that system now simply as bearing upon this matter of industry,-I do not believe that their social system is one calculated at all to cause the people to rise to a high state of civilization. I should not refer to it in this connection, were it not to express my opinion on this point. I think the great results I have seen there, and which I have referred to here to-night, have been brought about in spite of a religion that has little tendency to raise men up to a high plane, and of a social system that in my opinion has a tendency to lower men. I say that here as I would say it to them; although I do say that, in my opinion, they have been very much abused, as they have been very much misrepresented. The Mormons, as I have said, went there from persecution. They were persecuted, undoubtedly, and many things that we hear said about them, with reference to their conduct, with reference to their government, arise from the fact that they went there perfectly goaded to desperation. When men have been driven out,-when they have seen their homes burned, when they have seen their friends shot down, when they have been persecuted for their religion, when they have been, as it were, banished, the iron enters into their souls, and they will say and do a great many things, which people on the outside, who know nothing about the situation, think very hard. One intelligent man said to me, "I came over that mountain barefooted, my feet bleeding; I had nothing to live upon, and I went down into that valley and dug wild roots for months to live upon, and I am ready to do that again, if need be." On all other subjects, that man is just as intelligent as you or I, and a man who, on all business matters, would talk as intelligently as any one. And the man of whom I spoke as coming on with me, is building

one of the finest mills in this country; not as large as some in Fall River, but a large mill; and he came on to buy a hundred thousand dollars' worth of machinery. His credit is good for any amount he wants to buy. But when you touch him on the subject of religion, he is as sensitive as we would be; he believes in his religion as firmly as you and I do in ours. But while we say and feel that such Mormons as he are wrong in their belief, they are entitled to kind and careful consideration.

I have not touched upon many aspects of the Mormon problem that I ordinarily touch upon in my lectures. I have simply referred to those subjects which I think important, and which are worthy of the attention of the members of the Board of Agriculture—the subject of physical geography, the relations of different parts of our country to each other, and the organization of labor. But in addition to these, there are very many other things which need to be considered by all our people, and by the legislators of our people, who are dealing with this Mormon problem. They have been misunderstood and belied beyond measure. I have been indignant to hear the talk of men who have been to Salt Lake City a day or two, perhaps, and listened to the stories told around the hotels and stables about those men, stories that I knew were false from beginning to end. Such stories are related and passed on from paper to paper. But these people, who have been so abused, are doing a good work, so far as industry is concerned. They need to reform in regard to their social system. Polygamy ought not to be tolerated in our land. Let it be blotted out. But still, when you have said this, there are many things that can be said in favor of the Mormons, and many things which you can study to advantage among them.

## SECOND DAY.

WEDNESDAY, November 22.

The meeting was called to order at 9½ o'clock, by Dr. Durfee, who called upon Hon. RICHARD GOODMAN, of Lenox, to preside for the day.

Mr. Goodman introduced as the first speaker, Dr. James R. Nichols, who delivered a lecture on

## FOOD OF PLANTS, AND SOURCES OF SUPPLY.

## BY DR. JAMES R. NICHOLS.

The most delightful and instructive of the studies connected with the farm, relate to plant-life and the food of plants. It may seem to many that a consideration of the food of plants implies the necessity of a belief in the possession by plants of certain organs or powers of digestion and assimilation; and this belief should be entertained, for it is founded upon fact. Plants do indeed in a most proper sense eat and drink, and they are as capricious in regard to the kind and quality of the food which they demand, as are animals or human beings. It is as interesting to study the nature of the appetite and wants of a stalk of corn or wheat, or a blade of timothy, as that of a child which the mother so carefully and anxiously watches and tends during the weeks and months of early infancy.

What a mystery there is in the life of a plant! It is true, modern science, by the aid of the microscope and chemical analysis, has solved many intricate problems connected with plant-life, which are exceedingly interesting and instructive. The nature of the substances employed in building up the plantstructure is well understood, and also the form of mechanism which is adopted in the first beginnings of growth, and the chemical changes and transformations which occur; but the nature of the vital force which guides, and upon which all activity depends, we do not understand, and it is probable that human research will never shed much light upon this mysterious but most interesting problem. The little microscopic cell is the workshop in which great changes are elaborated, and during the season of vegetable growth this is the seat of the most intense activity. Every plant that grows upon our earth, however great or small, must be considered as having originated from a single cell, so infinitesimally minute, that the highest powers of the microscope are required to observe it. If we turn over one of the pebbles common in our brooks, we shall find a slimy material, of a greenish hue, adhering to its under side. This covering is a true plant, but it is one of the lowest of known forms. If we examine it with the microscope, it will be found to be perfect in structure, having an organism so wonderful as to command our admiration. Feeble and insignificant as it is,

it corresponds in structure with the huge oak which grows by the stream and overshadows it with its branches. The plant that adheres to the rock consists of a single cell, but that cell is as perfect and beautiful as any of those which make up the structure of the oak. The tree is but an aggregation of cells,—cells piled upon cells; and the work that is carried on within them is no more complex than that which goes on in the workshop of the humble unicellular plant.

It is with a choice of terms that we designate the cell as the workshop of the plant, in which the materials that enter into its organization are elaborated and fitted to aid in the increase of its substance. The nature of the food which is manipulated within the cell is indeed peculiar, inasmuch as plants gather together the waste products of men and animals, and again fit them for the use of higher organisms. Plant-food is oxidized food-food which it is impossible for animals to assimilate; and the plant, in all its functions and in the objects of its growth, manifestly occupies an intermediate position between ourselves and the insensible rocks. This is absolutely essential to the existence of man upon the earth. Of all the functions of plants, the most remarkable are connected with or related to the solar rays, for they possess the power of utilizing the sun's heat in a way which enables them to pull apart, as it were, some of the most complex and refractory compounds known to modern chemistry. The most tiny, feeble leaf, or blade of grass, has a power in chemical decomposition greater by far than is possessed by Liebig, Boussingault, or any of the great experimenters of the age. The separating in silence, in the quiet of the meadows, by organisms so frail that we can crush them between the thumb and finger, of a compound so fixed as carbonic acid, is one of the marvels'in nature which puzzles and confounds the philosopher, and leads him to bow in humility before the God of nature, whose power so infinitely surpasses that of man. But after all, this analytical power of the plant is no less amazing than its synthetical capabilities. The work of tearing apart oxidized bodies is immediately followed by that of rearranging the elements, and forming new compounds still more complex, and into these, as a fixed principle, less oxygen is allowed to enter. The great work of the plant is, to disassociate oxygen from compounds, and thus store up energies which are made

apparent when we use vegetable substances as fuel upon our hearthstones, or as food in our bodies. All the forces resulting from heat and muscular exertion have their origin in plants, and however great may be the exhibition of power, the leaves of the trees, and the grasses of the field, have utilized or elaborated it all from the solar rays.

Although the food of plants, as well as the method of appropriating it, differs from that of animals, there are analogies not only apparent but real between them. In animals we have the respiratory functions, and so we have in plants, for plants breathe as truly as we do ourselves; we require our food to be composed of certain elements arranged in certain combinations,—so do plants; we find it essential that our food should be in particular forms or mechanical conditions,—so do plants; we must be regularly supplied with food, and this is the case with plants. These are some of the similarities existing between plants and animals, and serve to show how intimate is the relation which subsists between plants and the higher forms of organized structures.

Although we have learned with certainty regarding the elements essential to plants, and also the forms of combination required, we have yet to learn the exact mode in which they acquire their food, and how they are able to build up such bodies as cellulose, starch, albumen, oil, etc., from these elements. No processes which chemists venture upon in the laboratory are found so difficult as the synthetical production of organic compounds. Indeed, organic chemistry has thus far proved totally incompetent to instruct how to form any one of these bodies from the elements, and for their elaboration we must look solely to the vital chemistry of animals and plants.

It is a well understood fact, that without plants animals could not exist upon our planet. In the wonderful economy of things it is absolutely essential that there should be some intermediate or connecting link between ourselves and the mineral kingdom, and plants constitute this important link in the chain of life. The three kingdoms, animal, vegetable and mineral, are correlated and involved in a cycle of changes which are unintermitting, and wonderful in their nature. We are incapable of being nourished by any form of mineral substances, but such nourish plants, and are transformed by them into vegetable

tissues and products; and subsisting as we do upon plants, we draw support indirectly from the insensible rocks. The plant consumes the rock-dust, and attracts to itself the carbon of air and earth; we transform these into flesh and bones, and, as a last step in this perpetual circulation of matter, after death they relapse again into their dead inorganic condition.

It was formerly thought by chemists that plants lived upon humus, a compound entirely organic in its nature, and when some of the metals were found in the ash of plants they were regarded as accidental ingredients or extraneous bodies which somehow intruded themselves into the incinerated mass. In our time, we know that these mineral bodies enter the vegetable structure as food, and that it cannot exist without them. The mineral portion of plants is small indeed compared with the nitrogenized and carbonaceous parts, and this paucity of the mineral substances was undoubtedly the reason why the early experimenters were led into error.

At present we are acquainted with sixty-three elements or primary bodies, of which all things, animate and inanimate, are Twenty-two of these have been found in plants, and therefore are to be regarded as food material. Let us for a moment consider the strange metals and other substances which plants absorb into their structures. Among the metals we find iron, potassium, calcium, sodium, magnesium, manganese, copper, cæsium, rubidium and zinc. It has been stated that arsenic has been found in plants, but this is doubtful. The non-metals are iodine, bromine, fluorine, chlorine, phosphorus, silicon, carbon, hydrogen, nitrogen, oxygen and sulphur. Nothing can appear more singular than the fact that the refractory metal. iron, can find its way into the stalks and leaves of plants, or that the rarer metals should be hunted out of the soil by them and appropriated as food. Some varieties of plants have peculiar appetites and require most extraordinary elements in order to Tobacco is one of these, and the ash which clings to the end of the smoker's cigar contains substances found in but one or two other plants known to man. Among the rarer bodies are the newly discovered metals cæsium and rubidium, and how or where the plant obtains them is indeed a mystery, as the most delicate chemical tests have failed to detect these elements in soils. In common garden beets, also, the same substances have been found. Copper has frequently been observed in vegetable products used for food, and, what is very singular, the metal has recently been discovered in the feathers of birds, and some of the tints in the plumage are due to its presence. The fluorine which is found in the enamel of teeth in men and animals, comes from plants, as does also the manganese which accompanies iron in the blood. Aluminium, the metal which, within a few years, has been regarded with special interest, as of great service in the arts, has been found in certain species of Lycopodium, and zinc has been found in the Viola caliminaria, a plant common in some sections of France. Bromine and iodine are found in the marine algae or sea-weeds, and for a long time all of these important substances, employed in medicine and the arts, were derived from sea plants cast upon the shore by the waves.

The organic constituents of plants, elaborated or formed from combinations of the elements, carbon, hydrogen, nitrogen and oxygen, make up the largest portion of their bulk, and therefore must be regarded as of essential importance as food. Before considering the sources and value of these agents to vegetable structures, it will be interesting to examine briefly the conditions under which plants start into existence, and the forces or agents which are involved in developing and sustaining the embryo before the plant has the power of seeking its own food.

In all the changes and evolutions constantly going forward in the vegetable world, the sunbeam plays a most important part. Analysis of a sunbeam shows that it possesses three distinct functions or powers. It is capable of supplying light and heat, and also it has actinic force, or the capability of producing chemical decomposition and recomposition. Upon the chemical influence of the sun's rays depends the germination of seeds as well as the growth of the plant. We bury the seed in the ground and shut it out from the influence of light, but we do not place it beyond the reach of the sun's actinic influence, for that penetrates like heat to the little earthy couch where the embryo plant lies hid, and arouses it into life. luminous rays of the sun, so important to the well-being of the plant, is actually inimical to the excitation of vitality in the seed. How singular is this fact! A series of carefully conducted experiments have proved that seeds will not germinate

in light, although supplied with heat and moisture, when the actinic rays are cut off. Deprived of the luminous rays, with the actinic in full force, they spring into life with great rapidity. Seeds sown upon the surface of the earth will scarcely germinate, as soil cultivators very well know; and on the other hand, seeds buried deep, so that the actinic rays cannot reach them, will certainly perish. The planting of seeds so as to secure the proper distance below the surface is a most important point in husbandry, as it has much to do with the early starting of the plants and the success of the crops.

How beautiful and wonderful is the process of germination, when the chemical and vital phenomena are set in motion by the actinic rays! The starchy particles of the seed become converted into gum and sugar upon which the young plant feeds. The tiny root peeps out from the husk, and with mysteriously directed powers plunges downward into the fertile soil. The slender plumule pushes upward towards the light. The soil cracks and heaves, and the infant vegetable emerges, fresh and moist, into the world of air and sunshine; with the unfolding of the first pair of leaves, and with the first lighting of the sunbeam upon their tender tissues, commences a series of chemico-vital phenomena wholly different from that of the preceding stage of existence. The plant is now fairly dependent for food upon its own energies, and root and leaf are the theatres of great activities.

None of the elements named as constituting the food of plants exist as such in them, save oxygen and nitrogen. Half the weight of a dried plant is carbon, and yet it does not exist in it as free carbon; it is all locked up in combinations of greater or less complexity. There is not one of these elements of food that can be supplied to the plant in its naked condition, as they not only have no power to nourish but are positively poisonous. There is much misapprehension regarding these points among farmers, which arises from not clearly understanding the statements of writers upon the chemistry of agriculture. Not unfrequently inquiries are received concerning the cost of nitrogen, carbon, phosphorus, etc., and sometimes orders are sent for these agents, which are designed to be used for fertilizing purposes. While it is true that nitrogen is an element needful in the nutrition af plants, it must be presented not

alone, but in one of two forms of combination, -either as ammonia or nitric acid; and further, the acid must be in association with an alkali, as soda or potash, in order to be safely employed by the farmer. In either one of these forms it is of immense value as plant food. Nitrogen is a gaseous body, and has neither taste, color nor smell. It cannot be burned, it will not support combustion, and it cannot be breathed into the It is a strange, negative element, and yet without its influence not a stalk of corn nor a blade of wheat can grow. It is the most costly of all our fertilizing agents, and yet millions and billions of tons are present in the air constantly, and every plant is surrounded by and immersed in it. Is not this statement perplexing or paradoxical? Nitrogen as it exists in nitrogenous bodies is alone available for plants, and the cheapest source, outside of refuse animal compounds, is in the form of nitrate of soda. This salt, known as Chilian saltpetre, is sold at the present time at about four cents per pound, which makes the nitrogen it contains cost about twenty-eight cents per pound. The nitrogen in sulphate of ammonia, at present market rates, costs thirty-five cents, and I have not found it so readily available or prompt in its action upon my fields. For grass lands, as a top-dressing, the nitrate of soda has proved with me a profitable It brings in the better quality of grasses and largely increases the crops. It should be pulverized fine, mixed with an equal quantity of fine, seasoned peat, and sown evenly over the field, giving to each acre two or three hundred pounds of Without a supply of nitrogenous food plants become feeble and ultimately die; and hence we must supply it in some form, either as it exists in manure or in commercial substances. The soil does not furnish it in sufficient abundance, neither does the atmosphere in any available form. There is always a little ammonia in moist air, which comes from decaying animal or vegetable matter, and also there are traces of nitric and nitrous acids in rain-water, but these sources of supply are wholly inadequate to the wants of plants upon most fields.

An acre of wheat yielding twenty-five bushels requires, in straw and grain, forty-five pounds of ammonia. The results of careful experiments show that under the most favorable circumstances no more than ten pounds of ammonia is ever supplied to an acre of soil by rain-water; so if all the ammonia of

the rain-fall is assimilated, thirty-five pounds in addition would have to be supplied to meet the wants of the wheat-field.

Carbon, the agent so largely consumed by plants, fortunately costs us nothing. The farmer need not trouble himself concerning this important element in plant-food, for the atmosphere furnishes an abundant supply for all our wants. It is supplied in the form of carbonic acid, and we do not know that it can be assimilated through any other carbon compound. A carbonate, unless it be of potash or soda, is practically valueless to the Carbonate of lime, in any form, cannot be regarded as a fertilizing substance having a commercial value. Very strenuous attempts have been made to induce farmers to purchase ground clam and oyster shells, the vendors alleging that they were equal to ground bones in fertilizing value; but this is a fraud of a serious nature. Clam shells are composed of carbonate of lime, while bones are made up of the phosphate of lime—quite a different substance, chemically and agriculturally The shells are composed of carbonic acid and lime, considered. the bones of phosphoric acid and lime,—the former acid having no money value, the latter having a high value.

Calcic carbonates should not be confounded with sulphate of lime, which is plaster or gypsum. In this substance sulphuric acid or oil of vitrol is in combination with the lime, in place of carbonic acid, and a very different chemical and fertilizing agent is supplied. It has high value as an application to some fields, although its action is not well understood. The experiments which the writer has made with plaster go to prove that its good effects are due rather to the acid than the lime. It has the power of fixing the ammonia of the atmosphere and forming sulphate of ammonia, which is a salt of much value. applying gypsum to soils, it must be remembered that but a small quantity can be made available in a season, as it requires nearly five hundred pounds of water to bring one pound of it into solution. Half a ton is a sufficient dressing for an acre of ground.

The element hydrogen is freely supplied to plants by dew, mist and rain, and therefore is costless to the husbandman. It is only through water that hydrogen can be presented to the plant, but this is by no means its only important office. It enters the plant as water, and it is through its agency that all

the various forms of food are rendered assimilable. It is the liquid medium which holds all the inorganic substances, and from the aqueous current which unceasingly flows through the little cells of plants, they are absorbed and appropriated as food.

Enormous quantities of water annually descend upon the land. If the rain-fall be but twenty inches per annum, it corresponds to something like two thousand and twenty tons of water falling upon each acre every year. Much of this is carried off by evaporation or through drainage. Still a large proportion is retained by growing plants or passes through them, aiding in most important functions. It can be shown that a gallon of water passes through a single plant of wheat in a season, and the aqueous exhalations from the broad disc of a common sunflower each day amount to six or eight ounces.

The wonderful substance (formerly rare and costly), phoephorus, is so essential an ingredient in the food of plants that not one of any kind can flourish without it. This highly combustible body, so offensive to taste and smell, and withai so poisonous, enters the plant in combination with oxygen, with which it forms phosphoric acid. The entire supply of phosphorus employed in the arts comes from plants, and they hunt it from the soil atom by atom, and incorporate it into their struc-Animals feeding upon plants abstract the element, and it takes its place in the bones in combination with lime, forming basic phosphate of lime. We gather the bones of the dead animals, and, after calcination, subject them to chemical trest ment, and thus isolate the phosphorus in a pure state in large How curious is this cycle of changes and transformations! We can in no way obtain a clearer conception of them than by reflecting upon the fact that the phosphorus found upon the end of every friction match we use in our dwellings has been gathered from the soil by vegetables, and passing through their organization it has taken its place in the bone of oxen, cows or horses, and from thence passed into the laboratory of the chemist, where it is fitted to subserve the most useful purposes. If this substance had a tongue, what an interesting history of adventures it could unfold!

The amount of phosphorus or phosphoric acid in the soil is usually insufficient to meet the wants of the plant, and hence the farmer must furnish supplies if he wishes to increase his

crops. Formerly there were but two sources of supply, that from manure or animal excrement, and that from the bones of animals; but now we have a third source in the phosphatic deposits found upon the coast of South Carolina. From these substances what are popularly known as superphosphates are made and sold largely in the market.

Potash holds a most important place in the list of substances consumed by plants, and hitherto much anxiety has been manifested regarding a supply equal to our wants. A few years ago we were acquainted with no sources of the agent save that of the ash of plants; and as mineral coal came into use for furnishing household warmth, wood ashes and the potash salts obtained from them became very scarce and costly. Every year the farmer removed from the soil large quantities of potash in his crops which he could not return again through the excrement of his animals, and therefore it was evident his lands were becoming impoverished to an alarming extent. High cultivation, as respects potash, increases this impoverishment, as all cultivated plants are richer in this substance than those growing spontaneously. To obtain a clear understanding of the needs of the soil, it may be stated that an acre of wheat producing twenty-five bushels of grain and three thousand pounds of straw, removes about forty pounds of potash in the crop. Can any farmer conceive of that amount of potash existing in the soil of any one acre of land upon his farm? We know it must be present and within easy reach of the plants, else not a blade of wheat can grow and mature the seed. Nearly all soils of course contain potash, but the quantity is often insufficient for crops of any of the cereal grains. A crop of corn of one hundred bushels to the acre removes, in kernel and stalk, one hundred and fifty pounds of potash and eighty pounds of phosphoric acid. We cannot raise large crops of corn without furnishing potash in some assimilable form; for a small crop of fifty bushels to the acre requires about seventy-five pounds of the agent. A fair crop of oats, say fifty bushels to the acre, removes only about thirteen pounds of potash. Barley and rye remove not far from thirty pounds each.

Now we have observed the great deterioration in our potato crops during the past ten or twenty years; and what is the cause of this alarming decrease of tubers? Can chemistry

point out the reason, or aid in remedying the difficulty? I think it can; and in order to understand the matter it is necessary to understand the kind and amount of food which the potato demands. A field of potatoes yielding three hundred bushels to the acre will remove from the soil in tubers and tops at least four hundred pounds of potash; also it will remove one hundred and fifty pounds of phosphoric acid. Now these amounts are very large, and show that the potato plant is a great consumer of the two substances, and also show that in order to restore our potato fields to their former productive condition, we must supply phosphatic compounds and substances holding potash in large quantities. For six or eight generations in New England our fathers have been exhausting the soil, by removing these agents in their potato and other crops, and we have reached a time when the vegetable is starving in our fields for want of its proper food. Our farmers have found that new land gives the best crops, and this is due to the fact that such fields afford the most potash. But so long as we crop our pastures so unreasonably, we cannot resort to new land, as land is not new that has had its potash and phosphatic elements removed by grazing animals. A potato field which gives but one hundred bushels to the acre requires at least one hundred and forty pounds of potash, but by allowing the tops to decay upon the field, sixty pounds are restored to the soil again, as that amount is contained in them. A medium crop of potatoes requires twice as much phosphoric acid as a medium crop of wheat, so that in two years with wheat the land is deprived of no more of the agent than it loses in one year with potatoes.

The aim has been in what has been said, to point out the nature of the materials which plants require, and to impress upon the minds of soil cultivators the great truth that, when they have gained this knowledge, and also learned the quantity necessary for a given crop, the accumulation and use of these materials are as simple as supplying raw materials for making cloth, boots and shoes, or any other manufacture. A field in proper condition for culture should contain, in ample abundance, all the inorganic materials which the intended crop requires, and these materials should be in an assimilable condition, or in other words, they should be in a soluble condition, so that by the aid of water they can be taken up and carried through the

plant organism. The proper manures for wheat and corn are the nitrogenized varieties, or those which hold nitrogen, either in the form of ammonia, or as nitric acid. These should be conjoined with phosphates and potash in considerable amounts. For potatoes, potash, phosphates and lime are required; the latter element, lime, enters largely into the leaves, and is an important article of food for the vegetable. Gypsum, or plaster, which holds lime and sulphurous acid, is a valuable manurial agent for potatoes, especially on moist land. Enough has been said to show that each variety of plants demands peculiar kinds of food, and unless this is supplied by the soil, or through our agency, it is impossible for them to flourish.

The sources of supply of food adapted to the wants of plants, are, for the most part, well understood; still, it may be desirable to devote a few moments to the consideration of this most important subject. We must constantly bear in mind, that there are but three substances consumed by plants which bear a high commercial value, or which, in other words, are of a costly nature. These are nitrogen, phosphoric acid, and The soda, iron, lime, &c, are not substances which, in the amounts demanded, should receive much consideration in estimating the cost of fertilizing material. They are essential, but the soil supplies them usually in sufficient quantities, and when this is not the case, they can be furnished quite cheaply. Animal excrement holds all the substances which plants require in an assimilable condition, and if enough was furnished to meet the wants of agriculture, we should have no occasion to seek for plant-food in other directions. It is best for the farmer to bend every effort to increase his supplies of excrement, and to utilize every pound of excrementitious material from house, barn and stable. It is presumed that all sensible, thrifty farmers do this; and still the want of further supplies of plant-food is most decidedty felt, and anxious inquiries are made as to how the want may be met. I presume it is well known to many of those whom I have the honor to address, that during the past nine years I have endeavored, by extended experiment on a farm, in Essex County, to show that fields can be fertilized and sustained in good tilth by the use of the agents holding plant-food, excluding animal manures altogether. In addresses at former meetings of the State Board,

and before other bodies of husbandmen, I have presented some of the results of these experiments, and as they have been published and read extensively, I do not feel that it is necessary to allude to them any further than to say, that each year, or each successive crop upon my farm, affords additional proof that properly prepared chemical or manufactured fertilizers can be used economically, and with a certainty of favorable results upon our fields. I have raised three tons of hay and three hundred bushels of potatoes to the acre, the past season, upon fields to which not a pound of animal manures had ever been applied. My corn-field gave me, this year, a little more than one hundred bushels of shelled corn to the acre, but this received a moderate dressing of cow dung, with a mixture of bone and ashes applied to the hills. The hay crop upon the farm, the present year, which has been characterized as one of the driest and most unfavorable ever experienced, was rising sixty tons,—an increase over the preceding year of more than ten tons. I give these brief statements to show that the experimental labors commenced nine years ago, continue to afford gratifying evidences of success, and are well calculated to settle some important controverted points in husbandry.

And now let me briefly consider the inquiry of the farmer, who, after exhausting all his supplies of barnyard dung, offal, house waste, &c., asks how and where he can obtain a further supply of plant-food. Shall he be sent into the market to purchase the commercial fertilizers of which the market is full? There are reasons for hesitating to do this.

I have said so much in public addresses and through the journals upon commercial fertilizers, that I ought not to dwell upon the subject here. But I must be permitted to say that the persistent exposure of frauds, and the explanations of the true nature of fertilizing compounds, has had the effect to improve them,—some in an important degree; still, they are generally not what they should be, regard being had to quality and price.

During the past four months we liave devoted much time, in the analytical department of the laboratory in my charge, to the careful qualitative and quantitative analysis of the different brands of superphosphates and fertilizing mixtures found in the market. It is the intention to continue these researches, until all the products of the prominent manufacturers have been submitted to examination, and then the results will be published. It is believed that if the sale of commercial articles is to continue, the exact value of each substance should be understood by purchasers.

In order to show how farmers are subjected to loss in the purchase of manufactured fertilizers, I will present the average cost of seventeen of the most popular superphosphates, the cost having been ascertained from accurate analysis of samples found in the hands of dealers. A portion of these analyses were made in my own laboratory, a part in others, where were obtained unquestionable accuracy of results.

The money value of the seventeen superphosphates averages \$16.35 per ton, and the average price at which they are sold by dealers, is \$51.25 per ton. These results give an average loss to farmers, upon every ton purchased, of \$34.90. Some of the superphosphates, so called, cost the manufacturer less than \$10 a ton, but they had a selling price of \$50 the ton. The highest cost of any one specimen was \$36, which is sold at \$60. The loss to the farmer on a ton of the former would be \$40, on the latter \$22. Now it is evident that none but the most wealthy farmers can afford to buy these products; and it is equally evident, if they purchase many of them, their more sensible neighbors will soon find them objects of support in the poorhouse.

A considerable number of these are sold largely in the Southern, New York, Baltimore and Philadelphia markets, and are less known in Boston. The superphosphates, so called, which hold a prominent position in Massachusetts and throughout New England, are what are known as "Bradley's" and "Upton's," and are manufactured in Boston. I will present the results of analysis made in my laboratory, in September, of these compounds. The specimens were procured at the warehouses of the manufacturers, under circumstances to preclude the possibility of deception, and therefore they may be regarded as representing the articles as offered for sale.

Bradley's extra superphosphate held in one hundred parts-

Water, .		•	•	•	9.76
Organic matter,	•	•	•		41.71
Inorganic, .	•				48.53
• •					100.00

Of the inorganic matter 4.99 parts consisted of sand.

Soluble phosphoric acid,				•	7.02
Insoluble,	"	46	•		12.44
Nitrogen,					2.12

This result shows that the superphosphate holds nearly fifteen per cent. of water and sand. It is, however, to be considered, that it is quite impossible to drive off all moisture in manufacturing, and the sand may be an accidental ingredient. In estimating the value of Bradley's superphosphate, if we regard the insoluble phosphoric acid as worthless, as is the practice of some chemists, it reduces the value of the compound to a low point. But this I must regard as erroneous and unfair; it has a positive value, although I do not agree with Prof. Johnson, in estimating it as high as six cents a pound. It is worth to the agriculturist a half that sum, three cents, and the soluble may fairly be estimated at sixteen cents a pound. The nitrogen has a fair market value, based on the price of nitrate of sods and sulphate of ammonia, of about twenty-eight cents. Estimating the superphosphate from these prices of plant-food, the value of a ton is about \$36. That is, the manufacturer supplies in each ton thirty-six dollars' worth of plant-food, a considerable part of which is available. The retail price is sixty dollars the This superphosphate certainly contrasts favorably, as regards money value, with many others found in the market.

The Upton phosphates are five in number, all of which have been examined. They hold of water, respectively, eight, thirteen, twenty-one and twenty-five per cent., not reckoning fractions. These amounts are all large, two of them being excessively so. No one of them contains a trace of soluble phosphoric acid, and the amount of insoluble is represented as follows: No. 1, 12.44 parts in 100; No. 2, 15.89; No. 3, 17.02; No. 4, 11.21; No. 5, 11.80. No. 1 contains of nitrogen, 2.12; No. 2, 1.59; No. 3, 1.55; the others none. No. 2 contains 2.38 parts of potash.

Mr. Upton is a well known and highly honorable gentleman, and he states that the making of fertilizers is incidental to his business as glue manufacturer, and that he makes as good an article as he can afford at the prices at which he sells his

products. Whilst it is desirable that more care and uniformity should be observed, and some modifications adopted in fabricating these compounds, the statements made by the house may be regarded as essentially correct. The usual price for the so-called superphosphates is about \$60 the ton; the Upton compounds are sold at \$28 and \$30 the ton, and from an estimate of the value of the plant-food they contain, based upon the analysis, two or three of the varieties are sold at fair market rates. One important point to be kept in mind in regard to commercial fertilizers is, that different parcels are of very unequal value. The chemist is able to give the exact value of a specimen taken from one parcel, but he cannot assure farmers that the article they purchase of the same brand is of equal value. It may be better, or, what is quite as probable, it may be much worse. The purchase of commercial fertilizers is full of risk, under the most favorable conditions, and I cannot point out a way by which it may be obviated. Our State system of inspection and analysis is a kind of legalized quackery, which has fallen so far beneath contempt, in the view of respectable chemists, that it is never alluded to in any estimates of the value of the compounds that are offered for sale. The statements of values, put upon packages, if in any sense accurate, are so presented that the purchaser is confused and misled. This device to protect farmers fails to have any practical value.

But after all, there are inherent difficulties in the business of compounding plant-food, that are worthy of consideration, and which lead to conclusions of an important character. The temptation to enter upon a manufacture, the products of which are of a nature not easily understood, and where there are opportunities for employing inert or worthless materials, is very great, and no wonder the business of fabricating fertilizers is crowded.

After much observation and thought upon the subject, I have reached the conclusion that it is difficult, if not impossible, for manufacturers to supply in a large way, through the ordinary channels of trade, superphosphates, or any compounded fertilizer, so as to give the farmer a just return for his money. The reasons for this conclusion are, that the elements of plant nutrition, or the three most important agents which should enter into fertilizing compounds,—phosphoric acid, potash and nitro-

genous bodies,-have a fixed market value, and the difference in price between their purchase, in moderate or large quantities, is not great enough to give to large manufacturers an advantage worthy the attention of honest men. nitrate of soda (three hundred pounds) holding nitrogen, or of kainite (chloride of potassum) holding potash, or a ton of bones or coprolites, holding phosphoric acid, can be purchased, at original sources of supply, at a cost but a trifle higher than is placed upon them when large amounts are taken. The margin of cost between large and small quantities of raw materials is not great enough, under usual conditions, to compensate honest men for preparing honest compounds, as the cost of manipulating and handling such heavy and bulky bodies is very great. This cost added to freight, and the commissions to middle men, wholesale and retail dealers, will consume a much larger sum than can be secured by advantages of purchase of raw materials. It is true the owners of sulphuric acid works, and of coprolite deposits, must have considerable advantage, on the score of cost, over those who undertake to manufacture fertilizers in a small way; but this advantage, I contend, is insufficient to afford satisfactory profits when good articles are produced. They do not secure the advantage of half a cent a pound on the acid, as that is a large manufacturer's profit: and a monopoly of any source of phosphoric acid potash, or nitrogenized products, is now almost impossible. A farmer preparing his own fertilizers has an immense pecuniary advantage over a large manufacturer. He can prepare them in seasons of leisure, when the time consumed in manipulation does not enter in as an element of cost. He saves the commissions paid to large and small dealers, he saves in cost of transportation, and he can purchase pure raw materials at nearly as good advantage as the manufacturer. Why should not the farmer prepare his own fertilizers? It requires but a small amount of skill; but if the farmer feels that he is not sufficiently well educated or experienced, he must remove these disabilities at once, by reading, study and experiment. The farmer of the period, to succeed, must be competent to prepare the food necessary for the plant children of his fields, or else he must expect to be left behind in the work of profitable husbandry.

It may be objected that purchasers of raw materials would be liable to become the victims of frauds, the same as when purchasing manufactured fertilizers; but such is not the case. As a source of nitrogen, nitrate of soda, in crystals, can be bought of importers with guarantees of a certain percentage of pure nitrate, and the crystals usually analyze from ninety to ninety-five per cent. So also the muriate of potash is sold with a guarantee that it is eighty-six or ninety per cent. pure, and these guarantees are quite reliable. Bone in flour, as a source of phosphoric acid, is the most hazardous to purchase; but whole bones can be secured, calcined and ground, and thus all risk is removed. Other sources of supply of the three great essentials of plant-food, do not offer any greater risks of deception than those mentioned.

Allow me to present a formula for a compounded fertilizer, which has proved of the highest value, and which can be readily prepared. I have used bone charcoal from the sugar refiners, as a cheap source of phosphoric acid, but burnt bones may be used instead, at about the same cost, and with fully as good results.

Take nine hundred pounds of bone charcoal, four hundred and eighty-six pounds of oil of vitriol, one hundred and seventy-one pounds of water; mix the water with the acid, and gradually add the bones, stirring the mass, that it may be fully acted upon. This affords a superphosphate which is dry enough to be ground, as soon as it is cool, and it can be ground in a plaster mill. To this add four hundred pounds of nitrate of soda, one hundred pounds of muriate of potash in powder, and we have a ton of fertilizing material, which I have found, upon analysis, gives 14.39 parts in the 100 of soluble phosphoric acid, 27.47 parts of soluble phosphate of lime, 2.8 of potassa, 3.14 of nitrogen. This gives twice as much soluble phosphoric acid as Bradley's compound, and more nitrogen. The cost of materials, at present market rates, will be about \$44. actual money value, estimating the active fertilizing principle, according to Prof. Johnson's prices, is a little more than \$68, but those prices are too high, and its value would be more correctly estimated, calling it \$57. This is a saving worthy the attention of every soil cultivator, and it affords a fertilizing compound of the highest efficacy.

But I fear to weary you by longer dwelling upon these points. They are, however, of the highest importance to the interests of agriculture, and should be attentively considered.

There has never been a time when soil cultivation, as a pursuit, was more hopeful or promising than the present. We have just learned the important fact that an abundance of plantfood has been stored up for our use in mines and rocks, and that we have only to reach out our hands and take all that we require. Ten years ago who could have dreamed even of such vast deposits of potash as have been opened up to us at Stassfurth salt mines, in Germany? Some idea of the supply may be formed from the fact, that at the present time more potasi is furnished from these mines, than from the wood-ash sources of supply of the whole world. Only about thirteen thousand tons of potash were sent to market from the United States and British America in 1870, and yet from Stassfurth, where a dozen years ago it was not supposed that a single ton could be procured, thirty thousand tons of the muriate of potash were manufactured and supplied to consumers upon both continents. during the past year. The surface salts at these mines, which hold the potash, are practically inexhaustible, and millions of tons will be supplied in succeeding years. No doubt our own salt mines will be found, upon careful examination, to afford potash, and hence we may look with confidence to the rapid cheapening of this most useful product.

Ten years ago, who could have supposed that, along the river beds upon the coast of South Carolina, there were millions of tons of rocks holding that important element of plant-food, phosphoric acid? These rocks were indeed known, but their important character was not understood. The phosphatic rock beds of that region extend over an area of several hundred square miles, and in some places they are twelve feet thick. It is estimated that from five hundred to a thousand tons underlie each acre. How vast is this supply of an agent of the highest importance to agriculture, and what a source of national wealth it opens to us!

Two important considerations force themselves upon our attention. One is, that nature has provided ample materials to supply all our wants. In mountains, and caverns, and streams she has deposited all elements and combinations which are

essential for our well-being and progress, and it is unreasonable and wicked to doubt regarding the future. The other is, that science must be sustained and fostered, for it holds the key which is alone capable of unlocking nature's storehouses, and bringing forth from the dark recesses of earth those rich materials which have been provided for our sustentation and happiness.

The CHAIRMAN. I apprehend that we are all well satisfied with this lecture. It has given us just the information we want at this crisis. A great many of our farming friends are complaining of the lowness of the price of certain products, and that the prospect for the farmer is very discouraging. And when we add to the low price of our products, the high cost of labor, and the amount of taxes we have to pay, there is naturally some discouragement, and therefore it is a source of great satisfaction when we find that we can get information from such a source as we have obtained it to-day, which will enable us to cultivate our farms at a cheaper rate, and thus secure an increased profit.

We all know that within a few years, there has been a great advancement in this matter of scientific agriculture. In old classic times, the people knew nothing about scientific methods of cultivation, and there were various devices practised to insure a good crop. For instance: it was considered that the best time to plant was on the full of the moon; and it was considered that a very certain way to propagate vegetables was by planting asses' heads in the middle of the garden. Unfortunately, all the asses' heads were not buried in that way, and a great many have been braying ever since against scientific agriculture. But we have seen that, through the means of agricultural colleges, and through the means of gentlemen like the lecturer before us, who have taken up scientific agriculture as a pursuit, great benefit has been derived by our farming community. I think it will strike you now, as it has heretofore struck us, when we have had lectures of a similar character. that there is no more certain way to advance agricultural pursuits than for each man to try the experiments which have been mentioned, especially in relation to manures.

In the region where I live, we find it impossible to get along without a certain amount of artificial manures. We cannot

get together enough animal manures to grow our crops; and in addition to that, we want something to start them with, and every farmer in our region finds that his crop is increased, is driven ahead, and gets beyond the reach of frosts, by the use of some of the phosphates. We find that we are not successful in raising large crops if we do not put some manure in the hill. But these things are ordinarily so expensive that it is only occasionally that farmers are using them in large quantities. Now, if we can obtain them in the methods which have been mentioned, we can increase our crops at very small expense, and our farms will be generally benefited.

Now I want to remind you that the whole subject is open for discussion. It is true, we cannot all discuss it in the scientific method which the lecturer has followed. It is a good deal like the alphabet, that the boy said he knew by sight, but he couldn't tell the names of the letters. But we have practical knowledge of certain matters connected with our farming operations. which will prove profitable themes for discussion this morning In the first place, there is the subject, sometimes discussed d the value of gypsum. We have found it very necessary to use a great deal of gypsum-plaster of paris. We find it of great advantage to us in the spring upon certain soils. is a question whether it can be used to advantage upon a: soil except those which are dry. Then there is another quetion in relation to hard-coal ashes. A great many farmer throw away their coal ashes; and as coal is being used all through our farming region, the question has become one of very great importance, whether some use cannot be made of the residuum of our furnaces. I have heard gentlemen say that they have used coal ashes with very great advantage. The have found that coal ashes, put around their fruit-trees, produced results which they did not anticipate. In Pennsylvania where bituminous coal is consumed, we find some crops almest entirely manured by those ashes. When I was there, this last season, I saw some potatoes that were raised with no other I had no doubt, from what I saw there, that these ashes were of some value. Then in relation to bones. A great many farmers have found them to be, in the end, the cheapest manure, and the most lasting in their effects, even when used in the natural state. We know that in the old country, their

pasture lands are kept up, with comparatively little expense, by giving them bones, in quantities such as we should never dream of—a ton, for instance, to the acre; by which they say their cattle thrive better, their pastures are kept up better, and they find that the cheapest mode of fertilizing them. We use them differently. We find that by ploughing in bones, on new land, we can improve the land, until we have time to make animal manure.

These subjects are all open to us, and Dr. Nichols has always been kind enough to answer the questions put to him, and I have no doubt he will be ready to do so now.

Mr. HYDE. I will ask Dr. Nichols how he would apply potash to potatoes?

Dr. Nichols. At present, the cheapest source of potash is the German muriate of potash. I have just received a few tons of it. You can obtain it in Baltimore, of Mr. ----, who is the agent of the German importers. It costs me, set down upon my farm, about \$54 a ton, and it analyzes ninety per cent. muriate of potash. Reducing the potash down to the oxide of potassium, that would make it cost about 37 cents a pound. The ordinary commercial potash cannot be bought for less than seven or eight cents a pound. The best article is worth nine cents. If any one wishes to have as much as a ton, I would recommend him to send to Baltimore and obtain it there. I think it could be landed anywhere in Massachusetts at less than \$60 a ton, and in combination with compost it is very excellent indeed. But if you wish to use the ordinary potash of commerce, the best way is to get a large iron kettle and dissolve it, and then add to the solution a quantity of dry muck, of course making an estimate of the number of pounds that you use and the bulk, and then use that in your compost heap.

Mr. HYDE. Would you mix the first you spoke of with muck also?

Dr. NICHOLS. Yes, sir, I would add that.

Mr. HYDE. How many cords of muck to a ton of the potash?

Dr. Nichols. I do not attenuate it very much. You can attenuate it down to any extent you choose, but you would make the bulk so large that it would be inconvenient to use it. You want to make the bulk considerable. I find it is an advan-

tage to use all these concentrated fertilizers with muck, in order to increase the bulk. Of course we cannot get any particular benefit from the muck that we use; we do a little, but it is very trifling. But it is very useful to extend these very powerful commercial fertilizers, for it enables us to use them more conveniently over our fields. I use it in that way, because it is very much more convenient; but I would not advise you to use muck very largely, because, if you are going to haul it upon moist land, of course you meet with difficulty. You want something that you can take readily upon your meadows, and sow it in that way. The formula I have given here I have found to be very excellent. It may be that some will feel that it is too troublesome to make these superphosphates that I have indicated here, but I cannot help thinking that we can all do it: it is very easy and simple. I really wish I could have all the gentlemen here with me half a day; I think I could show them the whole mystery of the thing. I have found so much benefit from that product, that I really wish everybody could make

Prof. CHADBOURNE. How much of the muriate would you apply to the acre, as a top-dressing?

Dr. Nichols. It depends upon the crop. Prof. Chadbourne. I refer to grass lands.

Dr. Nichols. I use the nitrate of soda for grass land. We need the nitrogenous element for that. For my cereals, I usually average my compost so as to give about one hundred and fifty pounds of potash to the acre. On a worn-out field, I should use more. I should exercise my judgment about that Nitrate of soda can be bought for about 3½ cents a pound, which will analyze about eighty-five per cent. I think that is a great deal cheaper.

These things, gentlemen, are all very hopeful. I always have a certain feeling of embarrassment in bringing these matters before my farming friends, because I do not know how they may strike them. My object has been to show what great encouragement we have. I hesitate to give formulas: I hesitate to state positively what you can do; but I have no hesitation in saying what can be done, and what I think every one can do; but it requires a little experience and a little patience. I think you cannot fail to see that the future is hope

ful-much more so than when I gave my lecture in Salem three years ago. I was thinking, as I came into the hall, of an expression that I used in 1868, in relation to the sources of supply of plant-food. I said then that I could not point out any satisfactory source of potash or phosphates. I was aware then that the Stassfurth mines, in Germany, were producing considerable quantities of potash, but none of us understood then the extent of those deposits, and therefore I made that observation with a feeling of deep regret that I could not point out any sources of supply for these very important elements of plant-food. But now, as I come here to-day, only three years having elapsed, I am enabled to say that I can point out sources of potash and phosphoric acid which are inexhaustible. I think that is very hopeful. And we have also made great progress in the combining of these things. We have disturbed those men who are engaged in the business of making fertilizers. have really frightened them into making a better article, which yet is very poor. I really would like to have you see the character of the letters I get from all over the country, in relation to this matter. I have one in my pocket from a gentleman who is manufacturing a fertilizer very largely. He says he meets with certain difficulties, and proceeds to give the formula from which it is made, and wishes to be instructed in certain matters about it. I was so filled with contempt on reading it, that I have not answered the letter. To show the deception, I will say, that he was actually making the fertilizer at a cost of \$7.50 a ton, of which he frankly confessed he was selling large quantities for \$50 a ton. I think it is high time this kind of fraud was stopped.

Mr. BUFFINTON. I use this potash, and the way I mix it is this. I have the street scrapings of the main streets of the city drawn down to my place, and then I have hogsheads placed as near the heap as I can, into which I conduct the water from the sink drain, and fill those hogsheads, and put in from fifty to seventy-five pounds of this crude potash, mix it, and then throw it on to this heap, so that I get one hundred or one hundred and fifty pounds of the potash to the acre.

This matter of potash is a very important one in this vicinity. I am satisfied that all our land needs it, and it is about the only cheap manure that we can get hold of. I have found one

hundred and fifty pounds to the acre too much for potatoes. It acted like an acid in the hill, and made the skins rough. I have reduced it down to fifty pounds, and it increased the crop from one hundred to two hundred or three hundred per cent.

Dr. Nichols. The matter of dollars and cents, of course, overrides everything else. We farm, not for pleasure, but profit. In addition to sources of supply, we want to find the *cheapest* sources. I suppose the gentleman pays 7½ cents a pound for his potash. Wood ashes would be cheaper, if he paid thirty-five cents a bushel.

Mr. Buffinton. I cannot get them for less than forty or forty-five cents a bushel, with a great deal of coal ashes mixed with them.

Dr. NICHOLS. I should hope no one would sell wood ashes for less than forty cents, because, from a bushel of wood ashes, you get four pounds of potash, and then you have some sods, a considerable amount of soluble silica, and a very considerable amount of phosphate of lime. You have the material in a bushel of ashes that really makes its money value as high as forty cents.

Dr. Durfee. In what way would you manage these ashes, if you had plenty of them? I have plenty of them, and I should like to know how to use them to the best advantage. I have been buying ground bone and making a compost. The ashes eat up the bone, and I find it makes a most excellent dressing for land, especially for vegetables.

Dr. NICHOLS. Well, doctor, you cannot make much improvement upon that. You see, in mixing ashes with bone, you get all the essentials of plant-food. You get the gelatine in the bone; you get nitrogen, potash and soda; what more can you have? I have for several years recommended that mixture, and some have told me that it did not succeed very well upon corn; but I have found that they did not use judgment in its application. They would drop the seed upon the fertilizer, and in that way destroy the germinal principle. A considerable quantity of earth should be put upon the compost before the seed is dropped. I think that the use of half a handful in a hill brings the corn up quickly, and makes a magnificent growth. I consider that it is a very profitable fertilizer to use

upon corn. I think you are quite right in your manipulation of ashes.

I will say a word in relation to leached ashes, in which I presume there may be some interest felt. Of course, when a soap-boiler leaches ashes, he leaches out everything that is soluble in hot water, and of course he removes a very large portion of the soluble potash and soluble soda, and those are the two important elements that he removes. He leaves the phosphoric acid, he leaves a certain amount of soluble silica,—that is, it is soluble to plants,—and he leaves the lime; and, upon the whole, he leaves a considerable amount of fertilizing substances in his leached ashes. Now, as regards the value of leached ashes, I think I said last year, that I regarded them as worth from fourteen to seventeen cents a bushel, but I cannot, of course, state the precise value, because some soap-makers will rob them more than others. I have never been able to find two specimens exactly alike. Some soap-makers will manipulate them longer, and exhaust them more thoroughly; but I think leached ashes a very cheap fertilizer, at about one-half the price of dry ashes.

Mr. BUFFINTON. What is you idea of the quantity of ashes to be used on an acre?

Dr. NICHOLS. I should estimate dry wood ashes as having four pounds of potash, and make my application in accordance with that estimate. I should say twenty-five bushels to the acre would give it a very good dressing; fifty would perhaps be better.

Mr. Buffinton. Fifty would be better than a hundred?

Dr. Nichols. Yes, sir, I think that fifty would be better than a hundred.

Mr. Boise. I would like to ask the doctor if he can tell methe difference between the hard, gray plaster, and the new variegated plaster. We have generally used, in our section of the State, the hard, gray plaster, and that has proved very beneficial. A year ago last winter, I was shown some plaster at the Southville station, on the Boston and Albany Railroad, which was variegated in color, and which was spoken of as much more valuable. I obtained some last season, and tried the two kinds side by side, and I could see a marked difference in favor of the soft, variegated plaster.

Dr. Nichols. I think that is quite an important point. The gray plaster is made gray by a little trace of iron. I bought twelve tons of plaster the past autumn, but I did not buy it until I had made an analysis of it. Some plaster is largely carbonate of lime, which is an adulteration of sulphate of lime. The real, genuine plaster, is sulphate of lime. The gray tinge in plaster is due to iron. I have observed that there is less carbonate of lime in this gray tinged plaster than in the other. The trace of iron in it is not of any very great consequence, but I find that wherever there are traces of iron, there is less of the carbonate; there are not so many veins of carbonate running through. So that even in buying plaster, I think it is quite important, if we are going to buy a very large quantity, to have it analyzed.

QUESTION. How is the manurial value of the phosphates obtained from those Southern rocks?

Dr. Nichols. These phosphatic deposits at Charleston anslyze about sixty-five per cent. of phosphate of lime. I found that the specimens of superphosphate, made from the Charleston phosphates, were poor; that the powder was not properly acted upon by the acid. Now, if you buy a bag of these phosphates from Charleston, and only half as much sulphuric acid is added to it as it ought to have, the other part is of no more value to you than sand; it is an entirely inert element, so far as plantfood is concerned, unless it is changed by sulphuric acid; therefore, the manufacturers of these phosphates at Charleston. S. C., can deceive by not properly manufacturing them. I have found some specimens where one-half of the superphosphate was wholly inert. You may take that Charleston rock, powder it up and put it on your land, and it will have no more effect than so much sand; it is perfectly insoluble. But when that powder is acted upon by sulphuric acid, you liberate the phosphoric acid, and then you get a superphosphate that will tell upon your land. I think that fact shows very clearly the value of chemical experiments. You can see what a miserable product can be made from a good material by improper manipulation. I am told that they are now grinding up these Charleston phosphates in Connecticut, and using what is called "chamber" acid,—that is, sulphuric acid, before it is concentrated,to act upon the phosphates; and I apprehend that they do not

change more than one-half of the powder, leaving the other half entirely inert. You may put it upon your ground, and it will remain there as long as you live, and you will never get any benefit from it. But of course, these deposits are very wonderful. I know of nothing so interesting. I think they show us that the Almighty is very watchful over our interests. I think we cannot escape from the conviction that these things are all provided for us. I did not suppose it possible that a source of phosphoric acid could be opened to us equal to that in South Carolina; and it is a mystery now how those deposits happen to be there. A number of theories have been advanced to account for it, but it is still a very great mystery. The deposit is perfectly immense, and I think the supply of potash at Stassfurth is equally great. It shows, I think, that as civilization progresses and science is developed, all these things are opened up to us. I never have doubted, for a moment, that a sufficiency of plant-food would be provided for us. Of course, we cannot expect to obtain animal excrement enough to meet our purposes; we must resort to these sources of plantfood, and we must all of us do what we can to bring them out. and develop the inestimable gifts which the Almighty has provided for us.

Mr. BUFFINTON. Is there any real manurial value in the shells that come in the phosphates, if ground up and put upon the soil?

Dr. Nichols. Oh, no, sir.

Mr. Buffinton. I had some at home, and tried the experiment, and could find no evidence of any benefit from it.

Dr. Nichols. Not at all. It is so firmly locked up that you might as well put on sand, or any other inert substance. But by chemical manipulation, by the use of sulphuric acid, of course you develop it, the same as you do in the case of bones.

Mr. Buffinton. Those deposits were no doubt made from mussels or shell-fish. Why should not our oyster shells be valuable, if put through the same process?

Dr. Nichols. No, sir, that is not the source of them. The theory I have in relation to them is this, and I think my idea is supported by the deep-sea dredgings that have taken place on our coast, in charge of our Coast Survey. I think the deposits of these phosphates have been going on for ages, and are going

on still. Those deep-sea dredgings have shown that the bones of the sea-cow, which are carried down the River Amazon in very large quantities, are swept by the ocean currents into deep-sea basins, and they accumulate there. In the bones of these animals and some others, the phosphates are abundant; but you will never get phosphates from a clam shell or oyster shell. Those are carbonates of lime. If that was the source of those deposits, it would be very easy to account for them; but it is not so.

Mr. BUFFINTON. We dig the muck out of the river here, where we have a great many shell-fish, and we find it makes a very good manure.

Dr. Nichols. Oh, yes, sir; that is nitrogenous. You go nitrogen from those deposits.

Dr. Durfee. About a year ago, my gardener took the pains to dig up his grape border and put in a large quantity of oyser shells. I would like to know what value there was in that operation; whether the doctor considers that that was of any utility or any usefulness to the vine, in the production of grapes? If I understand his remarks on the subject of shells, there is very little value in common oyster shells as a fertilizer.

Dr. Nichols. I would say, in relation to that, that there may be a slight advantage, a mechanical one, perhaps it might be called, if it be any advantage to keep the soil porous. I think if you should open your beds you would find that the little root lets had run in around the shells and twined about them. The tendrils of vines love to twine about something; they will twine around stones in precisely the same way. But the amount of decomposition that goes on would not afford any especial nutriment. There would be no fertilizing influence of any account. Perhaps in a great length of time there would be a little developed, but it would not be sufficient to pay for placing them there. If there was any advantage, I should say it would be mechanical. It used to be quite common to place bones is grape borders, and inasmuch as the tendrils of the vines would twine about the bones, the inference was that they were serviceable. But I have taken up bones from a grape border that had been down twelve years, and I could not detect any loss that was appreciable.

Dr. Durfee. In the early history of grape growing, I took all the dead horses I could find and buried them in the borders. I supposed there was some fertility about them.

Dr. Nichols. Yes, sir.

Mr. Phinney. I would like to inquire of Dr. Nichols whether he has examined, for his own satisfaction even, the value of the deposits that have recently been discovered in South Carolina. One of the largest manufactures in this State is in this immediate vicinity, large cargoes are constantly coming here, and it is likely that the article is quite generally coming into market; but how far it may be serviceable to the farmer is yet to be ascertained, I suppose. I should like to know how far he may have examined these deposits, to ascertain their value.

Dr. Nichols. I made an analysis of those rocks when they were first discovered, and of course I was incidentally made acquainted with the value of them; and I would repeat what I said before, that the whole value of those rocks to the farmer. depends upon the treatment. If they are properly treated, chemically acted upon, they will be valuable. I wish to make a distinction here between bones and these phosphatic rocks. We obtain phosphoric acid from bones, and also from these rocks; but in the case of bones, we obtain the nitrogen which is found in the gelatine of the bones. We do not get any of that element in those rocks; we simply get phosphoric acid. But I see no reason to doubt the high utility of those phosphates, if they are properly manufactured. The phosphoric acid that comes from those rocks is precisely as good for plants as that obtained from bones, but it must be liberated, and must be acted upon; and if anybody is half making them, or imperfectly making them, of course, if anybody buys these products, he will be deceived he will be cheated. But if properly acted upon, the farmer will get a product that will be serviceable to his crops.

Prof. Chadbourne. What is the physical character of those rocks? I have never been able to examine them.

Dr. Nichols. The upper strata of those rocks have a considerable amount of shells incorporated with them, but as you go down deeper, those disappear entirely.

Prof. CHADBOURNE. What sort of shells?

Dr. NICHOLS. Small coast shells, that have been mechanically incorporated with them.

Mr. Harlow of Shrewsbury. I have been exceedingly interested in this lecture and in this discussion. I have taken considerable pains to come to this meeting, thinking I should be paid by what I should hear, and I believe I have been. The subject which I particularly desired to hear discussed was the one treated this morning,—the food of plants, particularly the grass plants. I have followed farming for a few years, and I cannot make it pay, unless I have the grass crop. What I wish to ascertain is, whether any article can be purchased that we can sow broadcast upon our pastures and our mowing lands, and have more dollars come back than we lay out. I know we can apply ashes and plaster, but I wish something that will produce a greater effect.

I have tried some experiments in sowing ashes and bones. Coal ashes have been spoken of. Four years ago, I took quite a large quantity of coal ashes and sowed them upon a piece ten rods square. I have watched that piece closely ever since, and not an extra spear of grass has grown upon it. I also purchased a quantity of bone, as pure as any that could be found, ground very fine, and in seeding down a piece of land, I sowed it to barley, and applied the bone, five hundred pounds to a half acre, leaving strips where I put none. I don't think there was a spear of grass extra grew upon that half acre. periment that I tried was this. I had a piece of pasture land of fifteen acres, that has been fed for a hundred years, I presume. and I do not know but longer. On four acres of that piece, I sowed about a hundred bushels of ashes, and there has more feed grown upon those four acres than upon all the rest of the fifteen. Unleached ashes is the only thing I have ever applied that has paid me what it cost. I hoped, in coming here, that I should receive information where to go to purchase an article that it would pay to sow upon my pasture lands and mowings.

Mr. BUFFINTON. A year ago last August, I was drawing some gas lime from the gas works, and I saw Dr. Durfee's team drawing away oyster-shell lime. I took it for granted it was going on to his land, and I thought if it was good for the doctor, it would be good for me, and I would draw some of it on to my land. I used it in the same way that I should plaster, and I am

satisfied that it is worth more than plaster, on grass land or in the potato hill. But when I came to inquire, I found the doctor did not use it for manure. I would like to ask the doctor what he does with the leavings of that.

Dr. Durfee. I use it to stop the leaks in my retorts, where I make the acid for the print works.

Mr. Buffinton. Do you use the leavings on your land?

Dr. Durfee. It goes in with the wood ashes. There is not a great deal of it. We use it simply to plaster up the iron retorts. It makes a very fine plaster to stop up the cracks where the gas comes out. We can stop them very readily by making this lime into the form of putty and putting it on. In setting our retorts, we use it as we would any lime,—use it around our fire-brick.

Dr. NICHOLS. We should always bear in mind this fact,—that there are certain articles which are not to be regarded as plantfood, and other articles which are to be regarded as plantfood. Take, for example, clam and oyster shells. I stand up here and say, that ground clam and oyster shells have no fertilizing effects upon plants. This gentleman (Mr. Buffinton) gets up and says, "You must have been mistaken, because I have gone down to the gas works, and taken the gas lime and put it on my land, and it has had a good effect!" Now just look at that. The shell lime you get there has been burned; the carbonic acid has been driven off; it is no longer carbonate of lime. You have now quicklime, and your land is benefited by quicklime. If you had taken those shells before they were burned, pounded them up, and put them on your land, the land would have received no benefit from them. You see they have been burned, and that makes a very great difference.

Mr. BUFFINTON. Have you not made the statement that oyster-shell lime was not worth anything?

Dr. NICHOLS. No, sir. It does not matter from what source we get our lime. I do not know that burnt oyster shells are any better than burnt marble. Many of our lands are very much improved by liming. In Pennsylvania they lime their lands very extensively, and I think that there are many of our Massachusetts farms that would be benefited by lime. If you can get any shell lime from the gas works, I think it would pay

for hauling; but I would not advise you to buy oyster shells and grind them, and then put them on your land.

Then allow me say, as to the effect of coal ashes, that we must take a good many things into account. One gentleman says he tried coal ashes, and did not get any benefit. Now, if you use coal ashes from places where a large amount of wood or charcoal is used for kindling, you see you get a pretty large per cent., five or ten per cent., of wood ashes: two hundred pounds in a ton. That would pay for hauling. There is four or five per cent. of soluble matter in anthracite coal ashes, that is all; but spread upon moist land, meadow land, it will have about the effect of sand. If you cart a load of coal ashes upon a moist meadow, and cover that land with the ashes, I think it will usually have a good effect; and so will a load of sand have a good effect. It supplies silica, to some extent. I think we should take these things into account.

I do hope, gentlemen, that we shall not be misled about this matter of experiment; if we are, we shall be the greatest sufferers. We want to keep in view certain principles in agriculture, and do not let us be turned aside from them. I feel sometimes that our agricultural papers make a mistake. In farming, there are certain points that I think we must assume to be settled. And when a thing is settled, we ought not to keep opening it up and bringing it back again into the field of controversy. But this is constantly done in farming. There is so much doubt excited by these experiments, which, if they were explained, really would amount to nothing, that we get a little confused. I do not know how we shall ever remedy this to any very great extent, but I think this meeting will remedy it to some extent. I think we want to settle down upon sure principles in farming. There are certain facts proved, and we must seize hold of them and hold on to them, and add something more to them as we can; and in that way we shall bring agriculture to as near a scientific basis as we can. That is the only way in which we can make progress. If we settle a fact to-day, and some man who does not know anything about it, upsets it to-morrow, we shall never make any progress. We must, in the first place, understand what plant-food is, and we do know what plant-food is. Then we must know the conditions under which it is assimilated, and we do know those conditions. Then we must not be misled by supposing that a piece of iron or a clam shell or oyster shell is a manurial substance, when it is fixed and certain that it is not. We must cling to what we do know, and keep progressing.

Prof. CHADBOURNE. I think it was last year, or the year before, that I delivered a lecture before this Board that seemed to strike some as containing very strange doctrine; but it was mainly a recapitulation of experiments that had been tried in relation to farming, and tried under the very best circumstances that experiments could be tried, and the results were very wonderful in showing how little reliance we can place upon a single experiment. Now, I wish to say a word upon one point which the doctor has made. He says, when we have become satisfied on a single point, we ought not to bring it back into the field of controversy. That is true,—when we can become satisfied upon that point. But now another thing. He says that we are to bring agriculture down to a scientific basis, just as fast as we possibly can. I agree to that fully; but I think we are to take it for granted that agriculture is to-day very far from an accurate scientific basis, and that it will remain so for a great length of time. And I say this, because I feel the necessity of every man's studying his own farm. I insisted upon that in that lecture. Suppose I am told, for instance, that plaster, about which we have been talking this morning, is a good thing to apply to land. Well, I go home to Williamstown, and I know one piece of land to which I applied plaster, and I might just as well have applied sand or ground diamonds, if I had them, so far as any fertilizing effect is concerned. Right up above it, on the side hill, if you spread plaster on the land, you can see the effects of it clear across the town. I have considered that plaster is a fertilizer, and I go and put it on one place, and it produces no effect, and I put it on another place, and the effect can be seen, as I have said, clear across the town. Now, I come back and want this thing explained. I understand that plaster is a good fertilizer, and I did not understand, and do not understand to-day (I am honest about it), why it has no effect upon that piece of land to which I have referred. I feel that with all our science, and all the general rules we can lay down, there are still very many things which we do not understand. "The value of that observation," as Jack Bunsby says,

"is in the application of it," and this is the application: that every one must study his own farm, and every single rod of it. And that is the reason I believe in agriculture as a thing for men who have brains, and who are going to cultivate their brains, because the time will never come when a man can go on a farm, and run it as a locomotive can run on the track. He must study it every moment of the time, from spring to fall, and every new farm he gets, he must study. A doctor who is called to visit a patient, not only studies the general principles of medicine, and seeks to apply them to that individual case, but he studies the patient, and tries to ascertain his characteristics, and in order to get hold of them, he endeavors to find what were the characteristics of his family back of him, and he brings them all to bear upon the particular case. If he does not do that, he is no physician. And so it is with the farmer. Every single farm must be studied by every man who would cultivate it to the best advantage, and that will continue just as long as this world stands; and I am glad of it.

Mr. Sturtevant, of Framingham. I have tried plaster with great success on one piece of land, and I have tried it on another piece with no success. I can give an explanation of that which is satisfactory to myself. The land which did not show any result had a supply and required no more; the other piece required it for plant-food, and there I saw a result.

Mr. HYDE. If I may be pardoned a word, I will say, in relation to this matter of coal ashes, that some few years ago, when engaged in the nursery business, as well as farming, to some extent, it occurred to me that a great deal of coal ashes were going to waste, and that they contained some plant-food. I accordingly carted them, year after year, in considerable quantities. You may ask why I carted them year after year, when I tell you what result followed. The first year, the ashes were from red-ash coal. I did not think so much of it at the time, but I am satisfied there was a good deal of wood used in kindling the fires. I know that some of the fires in the houses where that coal was used were kindled daily. I afterwards carted the ashes from a village near us, where white-ash coal was used in the house furnaces, that are run for a month or two months together, or all winter, as I run mine, so that kindlings are used but two or three times during the winter, and very little wood ashes

made; and I am free to say, that after very careful observation, year after year, without any analysis, for I am not a chemist, I came to the conclusion that it did not pay me to cart coal ashes a mile and apply them to my fields. Then I used them as an absorbent of night soil, as I would use muck or lime. I made my basis for night soil of coal ashes, and they answered a very excellent purpose. I then applied the compost as a top-dressing to my low grass land, and although I do not think I derived much benefit directly from the ashes, yet, used in that way, they were of some value to me; but having muck in considerable quantity, I did not care to continue to use them for that purpose. Then I think coal ashes may operate mechanically on the soil, just as the oyster shells did that Dr. Durfee's gardener put into his grape borders. They helped the drainage of the borders, if they were likely to be too wet. So these coal ashes would act mechanically upon the soil in some instances, and might be of some use in that way; but I have yet to learn that they have any real value that will justify the time spent in working them.

QUESTION. Would not sawdust have been just as valuable as coal ashes?

Mr. HYDE. I am not competent to say. I have always avoided the use of sawdust and all substances of that kind, because I know that insects and worms injurious to vegetation resort to them as a safe harbor, and they would be introduced into my soil if I applied such substances.

Dr. Durfee. I think we ought to say something about sawdust. I have seen a great many loads of it carted out of this city on to the farms to the east of us. It is used in the stables under the horses, and the stable keepers sell it for manure.

Mr. Johnson. Can Dr. Nichols tell how much his corn cost per bushel this year? I understand him to say that he raised a hundred bushels to the acre.

Dr. NICHOLS. I keep a very accurate account of my crops. I keep a regular set of books, and give them all the attention that is necessary. I estimate that my corn costs me forty-five cents a bushel, and I do not include in that the value of the corn fodder. I estimate half the fertilizing material that I use in the field in the cost of the corn crop. I have raised corn for seven successive years at a cost of forty-five cents a bushel, and I do not see why it cannot be raised in Massachusetts at that

price. I do not raise it under the most favorable conditions, because I am not able to cultivate it myself; I am obliged to trust that to others and pay them for it. I am certain, it is a matter of demonstration, that my corn has cost me but fortyfive cents a bushel. In raising corn, or in raising any crop (I am only repeating a truism that you will all agree to) we want to get the most out of a small piece of ground we can. There is the secret of profitable farming. If you get a husdred bushels of corn from an acre, of course you get it at much less cost than if that hundred bushels were produced from three or five acres. I have a field of ten acres, which I intend to plant with corn next year. I do not intend to apply to it a hoe in any form. I am going to see if corn cannot be raised without the application of a hoe, and without the application of any manure, except such as I shall provide, of the description which I have given here to-day. I think that I shall be able to show, as I have been showing, that corn is a profitable crop to raise in Massachusetts. I do not see any reason why we should not plant corn.

Allow me to say a word in relation to corn fodder. I believe our good friend, Dr. Loring, has been somewhat sharply criticised, in regard to his remarks about corn fodder. I think the doctor's partly right, and perhaps partly wrong. I have made some experiments, the past two or three years, and especially this year, with corn fodder, and I find that corn fodder sown broadcast is perfectly worthless. I demonstrated that practically by experiments upon my herd of cows, and I demonstrated it positively by an analysis of the plant. The results of my observations and researches, up to the present time, have been these: that in raising fodder corn, we must allow it to reach a certain point before we cut it. In the first place, we must sow it in drills; it must have access to sunlight and air, and it must be allowed to proceed to a certain stage,—and that stage is the formation of the ear,-before we begin to cut it. Corn fodder fed to animals before that period will not increase the milk; and if the corn is sown broadcast, you may take your cows from a very poor pasture and keep them upon that fodder, and they will fall off in the supply of milk. The practical deduction from this is, that we must sow our corn, the sweet variety, in drills, and not sow it too thick, and we must sow as many as two or three crops, so as to have it come along in the hot season, in August and September, when our pastures begin to fail, and there is a period of three or four weeks when this can be used with very excellent results, as food for milch cows. I think the corn fodder resulting from a field of corn is of very great value for milk. I have found that my cows always felt the influence of corn fodder, and I esteem it very highly; but in estimating the cost of my corn, I do not include that, I call that nothing, although I think so highly of it as food for milch cows.

I should like to hear the experience of some of the gentlemen present, in regard to the cost of raising corn. I do not see why we cannot raise all the corn we use in Massachusetts. It seems to me that we ought to raise it. It is certainly a profitable crop, or has been with me.

Mr. Johnson. I will explain why I asked the question. Our Middlesex South Society have, for several years, offered a premium for the best experiment in raising corn, and this year the president offered a premium of fifty dollars for the best experiment. The chairman of the committee last year stated that he did not think corn could be raised short of \$1.50 a bushel, and the president of the society said he would give this premium of fifty dollars, for he wanted to know whether corn could be raised to a profit in Massachusetts or not. There were four competitors for the premium, myself among them, and we were of course obliged to keep an accurate account of the cost of the corn, and the committee were required to appoint some individual to superintend the harvesting, and weigh all the corn. Well, the corn varied in quantity, and of course in the cost. When the committee met to examine the statements and award the premium, the chairman again said that it was his opinion, notwithstanding it was stated that some of the corn was raised at less than fifty cents a bushel, that there could not be a bushel of corn raised in Massachusetts under \$1.50. He lives in the town of Southborough, and owns some of the most fertile land in the county of Worcester, and is a good farmer. His name is Peter Fay, and he is the man who sold the famous Peters farm to Mr. Peters. He has always been a farmer, and that was his opinion.

Now, I cannot state the figures in regard to the other experiments, but I can state my own. I raised ninety-three bushels

(fifty-six pounds to the bushel) of shelled corn to the acre. The corn was all weighed, and there were eighty-five baskets (seventy-two pounds to a basket) to the acre, which made ninety-three bushels, fifty-six pound to the bushel. I am not positive as to the cost, but I think it was forty-three cents and a fraction per bushel.

Mr. Moore. When was it weighed?

Mr. Johnson. Two weeks ago.

Mr. Moore. How much will it shrink before it is ready for market?

Mr. Johnson. I can't tell you. It will shrink considerably. But you will all be aware, that as the season has been, it must have been pretty well dried before it was cut up. I let it stand until I am satisfied that the corn was cured sufficient to crib and keep well, and the stubble also. It was husked and weighed before one of the selectmen of our town, and I kept close watch of the weight of the baskets, as he did, and there was not a basket that was not properly weighed. I was considerably excited during the whole time, for I knew what had been said, and I was watchful. I was glad to learn that the doctor had raised his corn at a price about corresponding to that. I hardly wanted to meet that corn committee, for fear they would think there must have been something wrong about that field of corn. Since I have been here, several farmers have estimated the cost of raising an acre of corn, and my friend from Upton, Mr. Knowlton, who has been a large corn raiser, estimated the cost at forty-two cents a bushel. In estimating the cost of my corn, I charged the crop with two-fifths of the cost of the manure,fourteen cords to the acre, -and it left me a net profit of about eighty dollars to the acre.

Mr. Buffinton. What do you call the corn fodder worth?

Mr. Johnson. I call the tops worth three cents a bundle, which is the usual estimate. I do not consider them worth three cents a bundle, unless they are used as they are cut for the cows. I was unfortunate in the corn. (I may as well tell you the whole story.) I planted it the fifteenth day of May. It remained dry, and the corn did not come up well, and after the first hoeing I replanted, and got more fodder than I did corn.

One word about corn fodder. I am glad that has been spoken of. For three years I have planted my corn fodder early. I became satisfied that I got nothing for the corn fodder fed to my cows. I do not think I ever received a pound of milk for all I fed to them. But for three years, as I said, I have planted my fodder corn early, and let it stand until the ears began to form. The moment the ears begin to form, I begin to cut and feed to my cows, and I find that in this way I increase my milk. I was glad to hear that idea thrown out by the doctor. It corresponds, again, with my experience. I think it is science.

Adjourned to two o'clock, P. M.

## AFTERNOON SESSION.

At the opening of the afternoon meeting, the chairman, Mr. GOODMAN, of Lenox, stated that the first subject for discussion was

## FARM AND GARDEN VEGETABLES.

He then proceeded to open the discussion generally, as follows:—

There is probably no subject which is of more interest to the farmer, not only as a producer, but as a partaker of the good things of the earth, than this subject of garden and farm vegetables. We all know that "God made the country, and man made the town," and the first country that was made was fortunately a garden, and the first man, I am sorry to say, did as Charles Lamb said he would have done, "sinned himself out of it." And we find that that feeling has come down to the present day. There are a great many more people to-day who are willing to sin themselves out of farms and gardens, and rush to the cities, than there are people who are content to remain in the primeval paradise. Now, what we are trying to do as a Board of Agriculture, what the intelligent and cultivated men throughout the country, who are engaged in the pursuits of agriculture are endeavoring to do, is to restore this feeling; to make men believe that they can live as happily and pleasantly on their farms in the country, and fully as profitable, as they can live in the city. And this matter of profit is the one which strikes us most forcibly, in relation to the policy which we are to pursue in our farming operations.

It was a remark of Lord Bacon, that the scientific culture of gardens afforded a surer index of civilization than the advancement of any other science; and I apprehend that if we turn to the world's history, or review our own experience, we shall find, at least, that there is as much happiness in the cultivation of gardens as in any other employment; and the experience of gentlemen now in this room, when given to us, will show us that it is as profitable employment for the farmer, as any other branch of his business.

The cultivation of gardens is one of the oldest occupations in the world's history. Our friends in Utah, whose history was so eloquently given to us last night, were not the beginners in the great work of irrigation. They are merely followers of those ancient polygamists, in Babylon and other places in the East, who were celebrated for their hanging gardens; and our historians have shown us, that the system of irrigation, practised among the ancient Peruvians, whom we now know to have been as fully civilized as any people existing on the earth, was more complete, and attended with more difficulties,—the ruins yet attest the wonderful skill with which their designs in this matter of irrigation were carried out,—than the system which has been put in operation by those people, in the western part of our country.

In the Old World, the raising of vegetables has attained a greater height of perfection than in this country, and they are used there to a far greater extent as food than among us. There is no country in the world where meat is as cheap and plenty as with us, and where it is partaken of so freely; and I am compelled to say, that there is no country where that article of food could be so well dispensed with. The French people live mainly upon vegetables, as those who have lived among them know, and they have learned, not only to cultivate them thoroughly, but to cook them well, and to serve them up in such condition that they are palatable, and that they sustain nature; and you will find the people who partake of that kind of food as cheerful and able to do as much work as those who eat meat. It is a great folly to suppose that people cannot exist upon a vegetable diet, to a large extent. It is a great fallacy to suppose that we can do more work, exhibit a more cheerful disposition, or discharge our duties as citizens or as men better,

with a full meat diet than upon a mixed diet, the major part of which is composed of vegetables. We know that the people of the countries of the East are muscular, and perhaps exceed in strength, in agility, and in their powers of endurance, the people of the western countries; and yet those people live on a spare diet of cereals and vegetables.

Now, in this country it has always been one of the evils of our farming system, but slightly modified at the present time. that the diet of the farmer and his family has been mainly of meat, instead of being diversified with the fruits and vegetables of the garden. You may go now, even in this nineteenth century, and as late as the year 1871, among the farmers of this country, and you will find that most of them have three meals a day, which, in many places, are composed in great part of pork, in one form or another. Now, my private opinion is, that the devil entered into the swine about two thousand years ago, and has not entirely come out of them yet; that the effect of his presence is always felt, and once in a while it comes out very strong, in the shape of some mortal disease. There are occasions when men are driven to a diet they do not like. Dr. Kane tells us that when he was in the Arctic regions, with his sailors dying around him with the scurvy, he found nothing more palatable than a frozen rat; but we should not fancy that as an article of daily diet. I am not prepared to say that we. should not eat meat at proper times, but I say that there is no occasion for having it before us habitually, especially pork. I have no doubt that any farmer will say that he can raise a twoyear old steer just about as cheaply as he can raise a hog, and if he gets one of those into a barrel, he will have a better quality of meat; or, at any rate, he will diversify the food of his family; and if he adds the vegetables which ought to be grown in his garden, his family will improve in health and in morals.

This matter of vegetables for the garden and farm may be treated in various ways: as the æsthetics of the farm, so to speak, and as a profitable crop for the farmer to raise. We have improved a good deal in this matter of raising vegetables of late years, but too many of those farmers who raise vegetables are in the habit of sending most of them to market, reserving but a very small quantity for their own use. Look at the gar-

dens of our farmers, and what do you see? Take asparagus, for instance,—ene of the most healthy esculents we have. If you see it at all, you will see it in a little bed about as big as a common door-mat, when it requires a space twelve feet wide by fifty or a hundred deep, in order to obtain a sufficient supply for a family. So it is with many of the most delicate vegetables, which farmers ought to have, but which, if they raise at all, they send the crop to market, and live themselves entirely upon potatoes and cabbage.

Now, in regard to raising vegetables for the market, we all know that it requires a peculiar soil to raise early vegetables, and that, as a general thing, it requires a different kind of labor from that which is ordinarily used on our farms. You can get a Yankee farmer to do almost anything, if you will allow him to do it with a horse or a pair of oxen, but when you invite him to come down and put his muscles behind a shorel or a spade, he is very apt to shrink from it. There are very few men who like to spade up a garden or to trench it, when they can take a pair of oxen or horses and plough it up; and that is one great reason why our farmers' gardens are not as they should be. In the first place, as Col. Waring emphasiically told you, your garden must be thoroughly drained. You cannot raise good vegetables upon wet land, and especially deep-rooted vegetables. Your land must be thoroughly drained and ploughed deep, so that they can reach down as low as ther want to go; and if the theory of the geologists and natural scientists is true, that the lower you go down the warmer the earth is, as the lower regions are only a few thousand miles below us, of course, the longer your roots are, the nearer they approach the everlasting fires, and the warmer they get. I suppose the theory of our friend, Mr. Greeley, about deep ploughing, is based upon that. However that may be, our gardens, as I said, must be thoroughly drained, and of course that must be by tiles. You cannot underdrain a garden by stone. You want your tile low enough, so that you can plough deep and get the soil in proper condition. The next question is, what kind of manure you shall use. If you are planting com, you can use coarse manure, because a gross feeder like that will take up anything; but for delicate vegetables, those which you want to drive forward, so as to make them mature early,

that they may be fit for the table, or at any rate to get them out of the reach of the frost, you want to use manure so composted, and so comminuted, that the very moment the roots reach it, they can begin to feed upon it. As a general thing, the manure of our farmers is so coarse, so wet and so imperfectly composted, that it is worth but very little for this purpose. But I find that those farmers who are farming for milk or the production of beef, begin the first thing to make their compost heap. And every farmer can begin it with the materials at hand. He may make it from the leaves in the woods, from the muck-bed, from refuse manure, from anything that he can get hold of that can be put into a heap, which, by the aid of moisture, will decay. Any one who is in the habit of travelling about, will find that these theories are reduced thoroughly to practice by those people who come to this country from the old, where they have been in the habit of cultivating small portions of land at a great profit.

There is no country where cultivation has been so thorough as in Belgium. This has been due to several reasons, one of which is, the small portion of land which each farmer occupies, and their habits of systematic cultivation. You find the people from that country and other countries of Europe, on the line of railroad as you go to the city of New York, occupying what would be considered very sterile and waste land, but on which they raise the best vegetables brought into the New York market. In former years, Long Island was the great garden of New York; most of the vegetables supplied to the city were brought from that place. They were able to do it by the use of what came from the stables of New York, which was taken to the island in sloops, and there used in such a way, that the farmers of that place for many years carried on, and still carry on, a large and profitable business. I apprehend that their profits, if compared with those of any other class of men, almost, who are not doing business in the cities, would be found to be much larger. So it is now around Boston. You will find in all the suburbs of the city, that the men who are making the most money in farming or gardening, are those who are raising vegetables for the markets of that great emporium. Of course, we farmers away back in the country cannot expect to compete in that kind of business, but we may still find a

good profit in it. There is hardly a place in Massachusetts that has not a manufacturing town near enough to it to take a large portion of its vegetables; and there is one article, especially, which has a large sale for eating purposes, and that is the Swedish turnip. Our friend, Dr. Loring, has occasionally told us how good they are for horses; the people in our region have come to the conclusion that they are very good for men and women. We are selling them at fifty cents a bushel, and it does not take a great many to fill a bushel basket. Many of our farmers are cultivating them carefully, in the best possible manner, and producing very fine, nice and sound ones. They are nearly as hard as a brick, and I suppose will keep about as long.

Dr. Loring. They will keep longer.

Mr. GOODMAN. There is only one other point on which I wish to say a few words, and that is in regard to hedging gardens. Prof. Chadbourne knows as well as I do, that what chills us men and women, as well as our vegetables, is the west wind. We do not dread the east wind, as our Boston friends do,-we rather like it, because it gets a little tempered before it reaches the Berkshire hills; but the west wind comes from the prairies, it does not cross any water, and it is just about as fresh as our navigators find it at the North Pole, and unless we hedge our gardens, there are a great many things we cannot raise. I can raise the egg plant, for instance, to that point where it will blossom and the fruit begin to appear, but unless my garden is hedged, it will never come to perfection. I have a very simple way of doing that. I plant two or three rows of corn on the west side of my garden, quite thick, and let it grow, and then my egg plants, having the shelter of the corn, will grow to per-That is merely an illustration of the benefit of fection. hedging. People who can afford to put a permanent hedge around their gardens, will find their fruit and vegetables much better and earlier, and they will have a great deal more comfort in working them.

Dr. Loring. The subject that you have opened is one of extreme importance, I grant, to man and beast; but it is one that I have discussed so often, that I crave the indulgence of the Board, while I go back a few steps and commence upon the preliminary chapter.

I trust you are not all wearied with the discussion of this morning upon the fertilization of the soil, because I want to present, as the commencement of vegetable growing, a few of my own ideas in regard to the preparation of the soil by means of fertilizers. I think you must all have been struck, not only with the difficulties that lie in the way of the scientific gentleman who addressed us with regard to the value of the application of commercial fertilizers, but with the different views entertained by practical farmers, who use every variety of fertilizer that they can lay their hands on. There was considerable disagreement, and nobody seemed exactly satisfied, or to have come to any definite conclusion. Dr. Nichols gave us an interesting account of the way in which he had brought up his farm in nine years, from comparative worthlessness to a condition of fertility that was admirable; but he did not go so far as to tell us exactly how he did it. And when he condemned the usual fertilizers found in the market, he did not state distinctly the means by which he himself has brought his farm up, nor the kind of fertilizer he used precisely. Notwithstanding the value of his lecture, we were left a little in the dark about that, and I ifelt when he got through that there was really no superphosphate that was useful for the purposes of cultivation. When we came down to the discussion among the practical farmers who were present, we were in the same difficulty. Nobody could tell us precisely what was the best method of fertilizing an acre of corn. The question was asked me here this afternoon, what the best manure to put upon potatoes was. So we were all left a little in the dark, a good deal afloat; I was, at any rate. And when Dr. Nichols said that we must accept fixed laws, those things that had been established, I had a mind to get up and say, "I will thank any gentlemen to show me what is fixed," for I am so hungry that I am ready to accept almost anything.

It seems to me, gentlemen, that the difficulty is this. This matter of fertilizers is one of the most intricate and complex with which we have to deal. Precisely what the soil wants nobody can tell, any more than we can tell precisely what an animal wants, in order that he may be developed to the highest point of perfection. We know he needs nourishing food, but what that is, we do not know exactly. I am satisfied that fer-

tilizers work in two ways: first, by directly feeding the plant, and, secondly, by putting the soil into such a condition that it can present to the plant, from itself, the food which it wants; in the latter case, working partly chemically and partly mechanically. I have no doubt about that. In the first class, I would put all those active manures that manifestly provide the soil with plant-food, as it is called, and at the head of this list I would put barnyard manure. You may go where you will, you may go to South Carolina, you may go to Germany, you may go to the Guano Islands, or you may go into any chemical laboratory in this country, the best thing, the last thing, and the fundamental thing, after all, is barnyard manure, and enough of it, to make a farm shine.

Now, it is a curious fact, that this barnyard manure answers both the purposes of which I have spoken. In the first place, it supplies the plant with food,—what we call the pabulum: what it is, I do not know. It is that which goes to make up bulk; that which, in a good slice of roast beef, goes to make a man feel full; and it is not nutritive, either. It is that which carries with it the fertilizing property, and makes a shovelful of fertilizing material a good deal better for the plant than a Now, I think that barnyard manure contains thimble-full. that in the best possible form in which you can put it, and that of itself, acting mechanically and somewhat chemically upon the soil, enables the plant to secure its food readily. Then it has another property. Dr. Nichols talked about nitrogenous manures this morning. They are the most stimulating manures we get, and while they act immediately upon the plant itself. they also act upon the soil in such a way as to compel a barren and impoverished soil to wake up and go about its business: so that those manures that are especially nitrogenous exhaust Exhaust it, why? Simply and solely because they compel the soil to work beyond its natural strength, so that the soil is exhausted after it has got through with that business. Hence there is a tradition somewhere, I forget where, that the farmers put fish manure upon their land until the land was worn out. It was the nitrogen that literally forced the soil into such a condition that when it got through, it was tired to death; it was like a man with an extra glass of rum. Give him the glass of rum and he will work like lightning; but when it is all

over, where is the man? That is the condition of any soil that is fertilized with nitrogenous manures. Barnyard manure contains that element, and that sets the land to work. Then barnyard manure has all those soluble salts, phosphates, nitrates, &c., which give food directly to the plant, and so it is at work all the time, doing in one mass what chemists and ingenious farmers are endeavoring to do by furnishing a substitute for each one of these active processes. It seems to me that that is the best illustration of the diverse ways in which manures act upon plants that I can possibly give you.

Then there is another fact with regard to fertilization which I think farmers should not overlook. I have said that your soils get exhausted; so they do, but I am perfectly sure, gentlemen, that the introduction of one soil to another may be made useful. For instance, if you have a bed of sand, you know perfectly well that you can increase the fertility of it by putting muck into that sand, if the muck is of good quality, and you know that you can improve the fertility of that soil by the introduction of clay. Every man knows that he can improve the fertility of his land by the mixture of one quality of soil with another, and it may be that the different qualities of soil are contained on the same farm, so that you can produce a good result from perfectly inert sand, when you mix with it soil of another character. Now, if we have on our own farms, lying side by side, diverse soils, which, if introduced to each other, will increase the fertility of our lands, that will help us a great deal. Everybody in Essex County knows that if he spreads two or three cartloads of sand upon his grass land it will make herdsgrass grow there as if he had sown barnyard manure upon the soil. That is one of the things that every practical farmer can test for himself, and I have no doubt that that will do a great deal towards the restoration of the old farms which we consider worn out. Every man who has a sand-. hill and a clay-bed can try it, and you may depend upon it, that if the same industry and skill and one-quarter part of the money that are now spent in experimenting with manures, could be spent in the marrying of one kind of land to another— " and what God has joined let no man put asunder "—we should see results that would astonish us.

That seems to me the foundation of the whole business, and

that is a thing to which we can apply the law so well laid down by Prof. Chadbourne,—and somehow or other he seems to dig up about all the facts and laws that we can find: he hits the nail on the head every time, and that is a good thing to do. Now, bearing in mind the facts which I have stated, how admirably we may apply the law as laid down by him, that every man should study the process of fertilization on his own farm, and learn there what is best to be done! I have nothing to say of commercial fertilizers or superphosphates, because I have long since got weary of using them. I am told that there is fifteen per cent. of water in one, twenty-five per cent. in another, thirty per cent. in another, and so on. Well, I leaned long since to respect water, for it seems to me to lie at the foundation of the whole animal, vegetable and mineral economy. You take these dry bones that have been so long idle, doing nothing, and how large a proportion of water do you suppose they contain, when you undertake to apply the test to them? Eighty-five per cent. of water in every man's brains—the best of them-a little more in some. Every particle of roast beef we eat-how large a percentage of water do you suppose we So I have long since abandoned the attempt to find out the value of these fertilizers upon the water theory, and I use them just exactly as I use any substitute for the best thing I can find, and always try to get that which is the most reliable in the market. I know perfectly well, for instance, that ground bones,—I do not mean bones ground to powder; I do not think they are good for much, I may be mistaken, I am ready to learn on that point,—but bones crushed coarsely, and properly treated with ashes, as Dr. Durfee described this morning, make a useful manure. I have an impression that if the bones are ground to an almost impalpable powder, they do not act upon the soil to so good an advantage as bones that are more coarsely ground. I am not sure that the rains do not wash the powder away. It will not stay until the soil can get hold of it. Gentlemen are apt to forget that great chemical laboratory which Nature has established in the soil itself. I think that this impalpable powder gets out of the way before the soil can get hold of it, and therefore I think that ground bone is a better and more reliable thing, and, combined with ashes, I have no doubt it makes a very useful fertilizer. I think Peruvian guano

applied directly to the soil is a stimulant and a good thing to use. When all these things have gone through the chemist's laboratory, and have got into chemical combinations, I do not believe that even Dr. Nichols will undertake to vouch for them. These are the views I have in regard to fertilization.

With regard to the application of manures, I am perfectly sure that manure, when applied to the soil, should not only be properly composted,—which means combined with other and bulkier articles,—but that it should be properly decomposed. It has got to rot before the plant can touch it. Remember that. It is no use to talk about a plant growing upon the influence of green manure, for when the plant begins to grow upon the influence of that manure it is no longer green; it is thoroughly decomposed, so that the salts of that manure are fit to be taken up by the plant. While a cartload of barnyard manure is reduced in weight by the process of decomposition, it will be increased in the elements of fertility by the development of soluble salts in the process of decomposition. This has been proved over and over again by the best English chemists. is therefore properly composting barnyard manures, or any other manures, with those articles in which your soil is deficient, which gives value to your manure; using sand as a compost for clay lands, and muck as a compost for sandy lands, and then letting the whole mass decompose before you expect the plants to take it up; for if you put it into the soil green, you have got to wait until the processes of fermentation and decomposition take place before the plant can derive any nutriment from it. I am sure if you will study the history of the best and largest crops that have been raised, you will find that they have been due to careful and accurate manipulation of the soil itself which produced the crop, and the application of carefully prepared and properly decomposed manure to the crop itself. That I think is the law.

Now I have one word to say as I go on—because I want to take these things in order—in explanation. We have heard a great deal said about fodder corn, and some people have been kind enough to look at me and say, "What a pity it is that you have committed yourself upon the wrong side of the fodder corn question." I have had more sympathy—I have had a great deal of abuse and a great deal of ridicule heaped upon

me, but I have had more sympathy expressed for me, in connection with this matter, than I ever had for any misfortune in my life, whether that misfortune was being stripped by a State Convention or anything else. I have never had gentlemen. approach me in such a sympathetic way, as much as to say, "What a dreadful thing it is to have got into this position." Now, my friends, I have not got into the position that these. gentlemen seem to suppose. I agree, I always have agreed precisely with what Dr. Nichols said this morning. When I stated to the farmers of Massachusetts that fodder corn was not a proper food to give to milch cows, I was dealing with what every farmer was feeding to his cows under the name of fodder corn. Now, friends, I used to raise fodder corn myself. Before I got too lazy to do it, I used to take a plough in the morning. furrow out my ground, take a small horse-cart and some manure, drop it into those furrows, and then I did just as the old, substantial, experienced farmers told me to do: I filled that drill full of corn. They told me that was raising fodder corn. Isn't that the way it is generally done? It used to be generally done so, and I believe it is generally done so to this day. That is the way fodder corn was and is raised. Now, what was my crop? It was just exactly the crop that every man gets who seeds for fodder corn in that way; and that was, along from the middle to the last of August a growth of vegetable matter from four to six feet high, without a shadow of a shade of maturity to it, as green as rowen, and that is green enough: as green as rowen, and as immature as a ten-year old boy: utterly without any indication of having arrived at a condition in which it would be nutritious to cattle. There it stood, with great leaves, great stalks, looking like I don't know what rampant growth. What did I do with it? Why, from the middle to the last of August, the hay-cart was sent out and it was cu: down with a sickle or a scythe, piled into this cart, and brought up to the barn, put before the cows, and they ate it. I am telling you just exactly the way in which this fodder com was raised and used when I came out and said it did not do any good. The cows got at it, and thrashed it this way and that until they got thoroughly worn out. They would eat a good deal the first day, not so much the second day, and by the fifth or sixth day, they manifested that they had had about enough

of that. What was the consequence? The experienced farmers in Essex County found that there was no increase of milk, but a diminution. Mind you, I am not talking about corn fodder, I am talking about fodder corn. The milk was diminished, but of everything else other than milk and beef, there was an abundance. I said there must be some remedy for this. One of the most sensible farmers in my district came to me and said, "I have known just exactly this state of things for years: it is a perfect nuisance, just as you have found out for yourself; I thought you were green and had not found it out and I would not say anything about it." I thought I would turn round and see if I could not find a remedy. I tried millet, and I found that at the time when this fodder corn had reached the condition which I have described, my millet had come to a condition of maturity; it stood almost up to my armpits, a solid mass of vegetable matter with seed heads to it, and when I cut that down, I found that the effect of that article, which had arrived at that degree of perfection, was very different from the effect of the fodder corn. I found I could make milk with that just as well as I could with June grass; there was no doubt about it at all. I had got a plant there which, occupying the entire soil as it does, without any spaces between the rows, I am satisfied will yield as much food to the acre as fodder corn which is planted in rows. You see it occupies every square inch of the land, while the spaces between the rows of fodder corn are utterly useless. It seemed to me that I had got at something there that was useful. I fed my cows, and I got from two or three acres of land, food that would last my herd of fifty animals as long as my corn fodder would. I found no difficulty about it.

Then there came up this statement that I was all wrong. And what did those gentlemen who thought I was wrong, say? Why, they said, "Corn fodder is good food." So it is; but what is that commodity which we call "corn fodder"? In the first place, it is the stalks of corn; in the next place, it is the butts, usually so called. It is something that is matured, it is something that is left after the ears are taken from the stalks. That is corn fodder. That is what has been known from the earliest period down to the present day as corn fodder, and that is not what is usually called fodder corn in agriculture. If

anybody undertakes to say that corn fodder is not good for anything, he is mistaken. I agree that it is a most valuable article of food; that you can make as much milk from that, properly prepared, as you can from anything else-more than you can from poor hay. I am sure that our farmers suffer as much from the waste of their corn fodder as anything else. When I have been out in the country and seen those long stalks, as big round as your wrist, lying in barnyards, trodden under foot of cattle, and wasted there, I have looked upon it as one of the most wasteful things of which a New England farmer can be guilty, where winter food is as dear and scarce as it is with us. So I use all my corn fodder; cut it up and spoly hot water to it, until it is in such a condition that my cattle will eat the whole of it,—the large butts, the leaves, and everything I think that corn fodder, combined with shorts and a little Indian meal, is about as good an article of food as you can give to a milch cow in winter time. That is what the advocates of fodder corn are talking about to-day, every one of them. Why, even the Commissioner of Agriculture, who has seen fit to come out with his manifesto in defence of something that he knows nothing about, saving that those farmers who undertake to reflect on corn fodder are ignorant, and do not know how to plant it, makes the statement that this food that I have just described is useful, and I agree with him that it is. If you propose to take an acre of land and plant this corn so sparsely that when it grows up, it will keep maturing, and along in the latter part of the season will have an ear upon it, and then cut it up and throw it to your cows, you cannot do a better thing. I agree to that; but it is then in the condition in which my millet is when I begin to feed it; it has reached the same point of maturity.

I dwell upon this, because, although it seems a trifling matter, it is a very important point for farmers to understand who wish to conform themselves to the best law of vegetable economy in feeding their animals; and it is not a trifling question, in that point of view, at all. I agree that the plant which I have described, brought to that degree of maturity which I have described, is a most valuable and useful thing. I have used it this summer myself. I raised six acres of sweet corn this summer; it brings us from \$150 to \$200 an acre, in the market

close by where my farm is. Of course there were some nubby and imperfect ears left, not suitable for the market, and I looked upon that six acres as something that I could feed in the winter time. I said to myself, "This will extend my hay crop; I have got something here to feed to my cows;" but my pastures got short, my mowing fields were not in a good condition to feed, and I had to go at this standing corn. I had to cut this sweet corn, standing there, and it did just what I supposed it would; it increased the flow of milk from my cows, and was a useful food to give them. Why? Because it had arrived at a degree of maturity in which the plant could nourish the animal and increase the flow of milk, and that I go for; with this exception, that I cannot afford to raise anything on my farm to consume in the summer time which I can pack away in the barn to feed my cows on in the winter. That is a fact. I am so sensitive on that point, that I will not allow my farmer, or any other person in my barn, to feed a lock of English hav to anvthing except to the horses that have been driven on the road. If a yoke of oxen cannot do my work and get their feed in the pastures, I do not want to have them around, and I am sure I do not want to feed any animal with that kind of provender which I can store in my barn to use for winter food.

Now, I think I have explained myself fully. Corn fodder I believe in; I will go with the rankest corn fodder man clear through to the bitter end. I have committed myself to that point, haven't I? But fodder corn I despise and repudiate, as usually known in the catalogue of green food for cattle. I might, perhaps, if I could take my pen and write it all down, explain myself still further, but I cannot do it now. I put it exactly on the same principle that I put the hay question; that is, it is a question of economy to the farmer and a question of nutrition to the animal at the same time.

Now, in regard to vegetables, just one word. I agree with all that Mr. Goodman has said. I agree with what he has said in respect to the profits of raising vegetables. It requires nice farming, careful agriculture, the proper application of manures, the proper mixing of soils, the most economical use of fertilizers, the utmost care and watchfulness, to raise any kind of vegetables for the market. It takes just as much vigor, activity and skill to run what we usually call a market garden, as it does to run

one of the cotton mills in Fall River, and I do not know but more, because, when Edmund Burke said it required more judgment to make a man a good farmer than it did to make him good in any other calling in life, he spoke the exact truth, and no man can deny it.

Now, what Mr. Goodman said about the use of a vegetable diet, I do not want to be forgotten. It is so important a question, that the Board of Health of the State of Massachusetts are appealing to me continually to write an article for them to put into their next report with regard to the value of vegetables. I look upon them as almost indispensable here. I look upon the use of salt meat as lying at the foundation of a great deal of the disease from which we are suffering in the eastern section of the United States, and in some other sections. I am sure there is nothing in the world so tough as a well-fed man. You cannot hurt him any more than you can a fox. You may take him to the North Pole, and he will live year in and year out on walrus or blubber, or anything else; you may start him on the dead run, and if he brings up at the equator, he is just as much at home in his linen blouse as he was in his furs. is a good stomach. A healthy digestion will carry him through all the perils of life, social, civil, or whatever they may be. It is a most remarkable fact in the history of nations, that those peoples who are fed upon a proper admixture of animal food and vegetable food are the most robust. The climate of Holland is not desirable: it is low, humid, damp, cold and disagreeable to a very considerable extent; it is no better than the climate of Massachusetts; and yet the Hollanders, living as they do largely on a vegetable diet, are hardy, tough, fat and round, and have a good time generally. They look as if they meant to enjoy themselves, and I have no doubt they do, and you can attribute to their vegetable diet a large portion of their physical condition. I hope that will be remembered. Now, I desire to say, that so far as the health of this community is concerned, if the farmers of the country are too busy to take up the raising of vegetables themselves, I hope they will put in a petition to the next Woman's Rights Convention, held in New England, and ask the women if they won't be kind enough to turn their attention to the cultivation of vegetables, and if they will only take up that as their part of the business of life, I don't care

what they do next. They may vote,—if they will vote for the right man,—or they may do anything they please. I say it in all soberness. It is a most admirable work for them to enter upon.

In regard to the profit of raising vegetables, there is no question. Where do the vegetables come from that are consumed here in Fall River? Where do the vegetables come from that are consumed in the good towns of Essex County? Do they come from the adjoining land? No. Strange as it may seem, we are living in our towns and cities upon the refuse vegetables of the Boston market. I have known barrel after barrel of green pease to start from the town of Weymouth, go into Boston, be sold there, and then be consumed in the town of Taun-Those pease made two journeys over the same road. That is a most extraordinary fact. They went to Boston first, and they went to Taunton to find a consumer. That ought not to be so. The profits that have fallen into the hands of those men who supply the Boston market with provisions are enormous. They are almost as rich as the Fall River mill-owners, and that is about as much as can be said in this Commonwealth.

Now, what applies to the region about Boston, applies to the region about Worcester, Lawrence, Lowell, Springfield and every other large city or town of this Commonwealth. There is not a single acre of land within four miles of those towns to which I have alluded, that could not be made, by a proper application of skill and industry, profitable to the owner for the purpose of vegetable growing.

Dr. Durfee says I have used up my time; I am afraid I have used up your patience as well, and I must leave for the train.

The CHAIRMAN. I disagree with the doctor totally upon the corn-fodder question. He states distinctly what he means by corn fodder: that is, what the farmers in our region, and through the whole of Western Massachusetts call "corn fodder," he calls "fodder corn," and there is not a farmer from Western Massachusetts here to-day who will not say that he has fed out his fodder corn this year with great profit, and that if he had not had this fodder corn, he could not have carried his cows through. I appeal to my friend here from Barre (Mr. Ellsworth) and to any gentlemen from that region, who keeps a dairy, to say if he has not used fodder corn this season to great

advantage. The question is not whether fodder corn is the best food. You have got to draw the same distinction in this case, that should be drawn in regard to barnyard manure. We all agree that that is the best manure in the world; but suppose you have not got it, then you must come down to the next best. So it is with corn fodder. If you have plenty of pasturage, you do not want this fodder corn, because it is poor stuff; it is hard to grow and difficult to keep, and when it is made, it is not half so good as grass, when put into the barn for winter; but the great question now is,—take a region like Western Massachusetts, where our pastures grow dry almost every season, where they are apt to fail by the first of September, and where, the last two seasons, they failed about the first of August,—what are we to do? Why, do what I have done for some years, raise what is called fodder corn, and raise it in the best possible way. Dr. Nichols has told us, and the Commissioner of Agriculture at Washington has told us this year, after gathering the facts from farmers all over the country, that the best way to cultivate this fodder corn is to plant it in drills, so that it will be exposed to the air and the sun, and get more mature, and do a great deal better than when it is sown broadcast. I have sown it for two years so thick that no weeds could come up. My pastures were entirely dried up, this year, and for at least six weeks fodder corn was all my cows had to support them, and I did not see that the profits from the milk were reduced from what they had been when the cows were in the pasture.

Mr. Buffinton. Did it spindle before you fed it out?

The CHAIRMAN. Yes, sir. I got the Western corn. It was sown broadcast, as thick as it could be, and it grew at least fow feet high. That is the stuff which is designated as "fodder corn," which we call "corn fodder"; because what the farmers in my section call corn fodder is corn stalks after the corn has been taken from them.

Now, there must be some virtue in this corn. It is perfectly idle for any man to say that you can sow a kernel of corn, and that the blade which comes up from that is worthless. You night just as well say that you may sow a grass seed and the blade of timothy that springs from it is not good for anything have sown Hungarian grass, but it requires more care, and I

cannot get my men to go into it as I want them to. But I apprehend that there is some virtue in this fodder corn, if we cannot get anything better. I think I first started the using of this corn in the southern part of Berkshire County. Until within the last few years, there were but five entries of this corn in our society; the past year, there were sixty entries. Those gentlemen here who know the Berkshire farmers know that they are men of intelligence and experience; that they are as good farmers as can be found in a mountainous country. They are men who know what they are about; they farm for a profit; and do you suppose there are sixty farmers there who devote from one to two acres every year to raising this fodder corn, knowing it to be entirely worthless? The doctor may be right; I am very glad he has given us this explanation; but he stands firmly to-day upon the ground that this kind of corn is worthless. It may be so down in his region; there may be some peculiarity in the atmosphere, or in the animals by which the assimilation of this food is of no benefit to them; but in the western part of this State, that is the only substitute we have for our pastures. It seems to me that we should just as soon cry down the raising of grass in our pastures as to cry down the raising of this fodder corn, until we find something to take its place.

Mr. WARD, of Shrewsbury. I think there is no great difference between Mr. Goodman and Dr. Loring. If I understand the doctor, he does not condemn the use of fodder corn. He acknowledges that it made everything but milk. When he went to his millet, and let that mature, then he made milk. Now, I believe Mr. Goodman in his remarks acknowledged the same fact,—that there was life-sustaining matter in the fodder corn, but he did not say that he increased his milk.

Mr. GOODMAN. No, sir; but I say I made the same amount of butter.

Mr. Ward. Milk is Dr. Loring's object; and it is the object of most farmers. It is the desire of most farmers to use that kind of fodder that will make the most milk, and I do not conceive that there is that extreme difference between the statements of the two gentlemen that some might perhaps infer. I believe they will come to the same point in the end.

Mr. Hyde. I am sorry that any gentleman has found it necessary to take up three-quarters of an hour in explaining his position upon the question of the use of fodder corn. I think we have heard enough about this matter of fodder com, especially when we have another subject assigned in the programme, in which we all have an interest. I do not object to the entertainment which the doctor has furnished; some parts of it were very amusing, and amusement is sometimes necessary and useful, but I am of opinion that we ought to discuss this question of market gardening. It seems to me that no more important question could be discussed at a meeting like this. It certainly ought to be a subject of interest to this city, if it is not to any other part of the State, but I think it is interesting to all our cities, and the neighborhoods about cities. I do not blame you Mr. Chairman,-you could not very well help yourself that the discussion took this direction,—but I regret that it has.

I do not wish to take up much of your time on this question; I was in hopes to hear from my friend, Mr. Moore, and others who are practical men, and who are raising vegetables for the market; but while up I will say a very few words.

You are aware, as every one is, that within the last few years the standard of market gardening has advanced about our cities, especially about Boston, and I believe from my observation in the principal large cities in the northern part of the United States, that there is no market so well supplied with good vegetables as the Boston market, and I believe I might go further and say that in certain things it is unsurpassed on this continent; among these are cauliflower, lettuce and celery, and I might add, strawberries, but these come more properly under the head of Fruit Culture. I say the standard has been greatly elevated. How? Through the instrumentality of horticultural and agricultural exhibitions. I can remember that only a few years ago a great many vegetables were brought to our Massachusetts Horticultural Exhibition, that we were ashamed to have exhibited; still it was hard to refuse contributors who had taken the trouble to bring them in, perhaps some distance; but finally the committee said "No, we must raise the standard; our room is limited, and we must have none but the best." The result is, that we now have exhibitions such as I have

never seen anywhere else except at Concord, and possibly at Dedham. They have done the same thing there, they have excluded the coarse vegetables, except it may be mangolds, where bulk is sought rather than fine shape and quality; these exhibitions, and others that I might mention, have been made better, the public have been educated up to a higher standard, and they have come to know what a first-rate vegetable is; and that is just the object which, as it seems to me, should be sought by these exhibitions; and what we want to talk about to-day is the best method of raising superior vegetables.

Now I endorse all that has been said in regard to a vegetable diet. I do not want to give up my roast beef; I like those things just as well as the others; but I do like vegetables. You may laugh when I talk about the flavor of vegetables, as I do about the flavor of fruit, but you know we fruit-growers cultivate this matter of taste, and some of us think we are quite acute in the matter. I sometimes taste twelve or fifteen varieties of grapes, and taste apples and pears in the same way. There is just as much difference in the flavor of different kinds of apples or pears, as there is in their looks. Just so it is with vegetablesthe cabbage or the turnip-and I don't know why we should not carry this same thing into vegetables, to see whether they are the best of the kind that can be raised. To illustrate what I mean: Here is a man who sets out his celery in early summer, and earths it up as he finds it convenient, without regard to the season whether it is wet or dry; and when he comes to dig his celery it is rusty, wormy, thin and poor. You go to Mr. Crosby, of Arlington, or some other good grower of celery, who does not treat his celery in that way; and which would you take? You would not hesitate long to take that which was tender, crisp, delicious and free from all those imperfections of which I have spoken. What makes the difference? One man knows his business and the other does not. One gets a good article, and the other does not.

You may carry this all through. One man wants to raise cauliflower. He goes into a seed store and buys cheap seed; pays five cents a paper for it; he could not get a decent cauliflower if he bought a pound. Another man goes in and asks, "Have you cauliflower seed? I don't care about the price, if it is five cents a seed, if it is only good." What is the difference?

This man gets a magnificent white head of cauliflower, ten, twelve I am not exaggerating this; I am tellor fifteen inches across. ing you what I have done myself, and what others have done a great deal better than I have, for I do not claim to be a grower of vegetables; I only grow enough of such as will grow in this climate for my family. That is what I mean. I say that you can carry that principle all the way through. To illustrate further: there are men here who are very particular about their animals. If I should show them a good Jersey animal they would say "Where is his pedigree?" and if I said, "I cannot show you his pedigree, but I can assure you he is a very good animal," they would say, "We don't want that animal at any price;" but you buy your seed without regard to its quality; you put that seed into the ground in any way you can; you are not particular how the garden is ploughed up, and yet expect to get a good crop of turnips or cabbages or beets; that is not the way to do this work; if it is worth doing at all it is worth doing well.

Now certain gardeners about Boston have acquired a reptation for certain things. I can tell just as well who will have certain articles first-rate, as a butter dealer can tell who make good butter up in Western Massachusetts or in New York, and who will make it good every year. I will tell you where you can always get a first-rate article of lettuce or cauliflower or celery every time, and they will never fail. Why? Party, perhaps, because they had made a specialty of these things, but mainly because they knew their business. They know what a good thing is to begin with.

Now do not find any fault with me, for I do not mean any particular agricultural exhibition, but I have seen crowds of vegetables in various agricultural exhibitions that never ought to have been there. In the first place, it misleads the public. They think those vegetables good when they are not good, and they ought not to be admitted. The exhibitors ought to be told to raise better vegetables, and then they will be shown. It is a good deal as it was up at Amherst last fall. Some men came to Colonel Clarke and said, "We have entered for this horse race, but here is a man who has got a horse that will distance all our horses, and take all the money." "Well," said the colonel, "Let him do it if he can. I am glad of it if be can

distance all your horses; go and get better horses." Now I say exclude those vegetables, and tell the people who bring them that they must raise better. Do you say that cannot be done? I say it can be done; it only requires men who understand their business. It is hard to raise all these things to perfection. I grant that it is a hard and difficult thing to run a farm successfully. I said at table to-day, that it used to be believed that a farmer could take his smart boys and make ministers, lawyers and doctors of them, and make farmers of the boys that were left—make farmers of the fools. The fact is, you want the smartest boys to make farmers; if a man does not know his business he cannot succeed.

Dr. Nichols told us that the farmer could make this manure that he recommended. I do not see how. It is easy for him to make it, but could a man take hold of it and learn as he could. Now we can do this thing. My business takes me to almost every part of the State, and I have noticed, as I have gone around, how many farmers there are who feed themselves and their families with pork and various other articles of food that are not among the most healthful, and upon whose tables I have rarely found any other vegetables than a potato, and possibly a cabbage, when there are at least twenty varieties of vegetables, some of them most delicious, which can be raised just as well as a potato or a cabbage. The wonder to me is, that you scarcely find a garden, go right through Massachusetts, that has asparagus, that has cauliflower, that has celery, that has the egg-plant, and so I might go on and enumerate vegetable after vegetable that you rarely find in a farmer's garden. If they are a luxury, why shouldn't we have them for our own use, to say nothing about raising them for market. Just look at the matter of cauliflower. I grant they are a little capricious, but look at it; I sell my surplus for from twenty-five to fifty cents a head. They will yield about as well as cabbages; they will not all head as well as cabbages; but suppose half of them head, what a crop it is. There is no more delicious vegetable than the cauliflower. Do you ask if there is a demand for them? The public cannot get enough of them. These are all within our reach, even if we do not want to grow them for profit, but I take it farmers, like other men, want to make all the money they fairly and honestly can. Some of us

farm for pleasure, but most of us farm for profit. We are talking about gardening for profit. Now where can you make the most money? I do not believe you can make it in raising ruta-bagas; they are very heavy to carry to market, especially if you happen to be twenty miles from a market, but you can make thousands of dollars in raising asparagus, and you can send it just as well twenty, thirty or fifty miles, as you can send it four miles. It may be that the middle men get rather more than they ought, but that is one thing; it is not heavy to cart, and it always sells. I never knew the market glutted with asparagus. Mr. Moore raises the best that is raised in Massachusetts. I never knew the market fully supplied with cauliflower or asparagus. I never knew it glutted with celery, and so it is with lettuce. Do you know that Boston supplies the lettuce and celery for the markets of New York and Philadelphia, to considerable extent? It is true; in my own town of Newton, hundreds of dollars worth of lettuce are sent to New York every spring. It seems very strange that they cannot get lettuce there. It can be raised anywhere where they will attend to it. One hundred dollars worth of it will not weigh as much as five barrels of ruta-bagas that you would not get more than \$15 or \$20 for. Now you can raise lettuce out of doors and in doors. I speak of these things merely by way of illustration. This is a subject which I could talk about a great while, but it was not my intention to speak at any length. I wanted simply to throw out these hints to provoke some discussion. I want to hear from others who I know are well qualified to speak on this subject.

Mr. Stone. I am not going to make a speech: we have some gentlemen here, Mr. Moore and Mr. Slade, and others who know all about this subject that is now before us. If we can get our friend Moore at it, I think he will give us something that will please us; and if there are any gentlemen here who have attended the Concord show, and seen the display of vegetables in that hall raised in and about Concord, Arlington, &c., coming from those very market gardens that beat the world, my friend Moore would need no further introduction than to say that he is one of the men who does it. I hope he will tell us how it is done; and I hope we shall hear from our friend Slade, who lives in this immediate vicinity, and who

is a very successful cultivator of strawberries and vegetables, and who finds his market in Boston. I want him to tell us why he is obliged to send his vegetables to Boston.

There is another thing I want to bring to the notice of this meeting, and that is, an essay that is published in the Massachusetts Agricultural Report of the present year, on market gardening, by the very gentleman whom I am endeavoring to call up, Mr. Moore. A more valuable essay, according to my idea, was never written and printed in this or any other State, if gentlemen will only examine it and learn from it.

Dr. Durfer. If I were from Middlesex, I think I should stand up here pretty bold on this subject. I have been dwelling considerably of late upon statistical information, and when I came to look over the statistics of Massachusetts, and saw what Middlesex does in this matter of raising vegetables, and the annual income received from that source, it astonished me; and, as I said before, if I was from that county, I think I should be ready to say something in regard to the position of Middlesex on this subject. I notice in the statistics of the Industry of Massachusetts, that Middlesex County received more income from the growing of vegetables than the whole State of Massachusetts besides, and any man who comes from a county that has as good ground to stand on as that, certainly ought to be heard on this floor.

Mr. Moore, of Concord. I do not propose to say anything on the corn-fodder question, but I could not help thinking, at the time when that matter was under discussion, that a gentleman who is as smart as Dr. Loring must have been in a pretty tight place, if it took him an hour to get out of it. I deave it there. I think that is answer enough to all he has said.

I do not know that I need to speak of the importance of raising vegetables for consumption by the human race, or for consumption by cattle; certainly not, as far as the human race is concerned; but I do not think that our farmers understand the necessity of growing roots for their cattle. If they do understand it, they do not do it. There is no doubt that the feeding of roots makes cattle more healthy, and they are probably cheap food. In raising vegetables for the market, there is a necessity that the soil should be adapted for growing

vegetables. If you propose to raise a handsome crop of carrot, parsnips, or any other long-rooted vegetable, it cannot be dose on clay soil; it must be done on sandy loam, or soil of that nature; while cabbages and cauliflowers would grow better on clay soils. The first thing in growing vegetables is the preparation of the soil; that is a very important matter. In the first place, the soil must be deep; it must be well drained, and it must be so thoroughly harrowed and stirred as to reduce it to a fine tilth, otherwise you cannot raise smooth roots; it is impossible, with lumps in the ground, to raise smooth roots. Then it must also have high manuring. Farmers are not aware what market gardeners mean by high manuring. A friend of mine, who is a market gardener, who cultivates only ten acres of land, uses two hundred and fifty cords on that ten scree. Of course some of it goes into his hot-beds; but that would frighten an ordinary farmer. I do not know where to get so much manure as that; I get all I can, and make it go as far as I can.

To grow vegetables as they grow them in the vicinity of Boston, you must have an abundance of manure. Not chemical manure; I doubt if you could grow vegetables with any of the preparations that Dr. Nichols could give you. I should not dare to try it, with any of them. Although I have dissolved a great deal of bone in sulphuric acid, and formed what I called superphosphate, and found a good effect from it, yet I have only used that in addition to the other fertilizers.

After the preparation of the ground, and having the soll highly manured, then you come to the seed. Now, farmers do not understand that matter as market gardeners understand it. The difference between good seed and bad seed is the difference of all their profits. No one who uses poor seed can raise good vegetables. As friend Hyde says, good seed is of the first importance; without it, you cannot raise good vegetables. In the growing of vegetables as food for cattle, a little coarseness might be allowed, because, as friend Hyde says, balk is of more importance than smoothness; but in raising vegetables for the market, it is necessary that the seed shall be of those varieties that will grow a smooth root. Much of the cauliflower seed that is sold is worse than worthless, for if you manage to get plants above ground, and have a poor crop, that

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is worse than if they did not grow at all, for then you would try some other crop. Take turnip-beet seed, to illustrate. Suppose a farmer sows an acre of turnip-beets, the product of that acre should be six hundred bushels, to say the least. That would not be a large crop. Now, if he raises a good article, take one year with another, they will bring nearly \$1 a bushel in Boston market; but if they are a coarse article, that market has become so particular, that the dealers will not take a coarse article, and it is no use to send it there. If it is a coarse article, it is worth what? Anywhere from fifteen to twenty cents a bushel, as food for cattle. There is the difference between good seed and poor. You can all see it at once.

After the seed is sown—and, by the way, what Dr. Nichols said to-day is true, a large portion of the seed is planted too deep-the market gardeners use a small hand-roller a great deal in their business, because you can sow your seed at a less depth, and it is more sure to germinate if the soil is compacted by running a hand-roller over it after sowing, and it will come up much better. In sowing their seed, market gardeners are very careful—and the same would apply to a great many farm products—to have their rows perfectly straight and of uniform width. I contend that it is no more work to raise beans or anything else in straight rows than to have them crooked, and you do not annoy anybody, or make anybody twist his head off in looking across your field. Why is it better to have the rows straight? For the reason that you can run your horsecultivator and your wheel-hoes much nearer to the row when it is straight than when it is crooked; therefore, you save in your cultivation. Then, if you wish to cultivate in the best way, you will cultivate early and often; the old democratic way of voting, when I was a boy. Keep all the weeds down; don't allow them to get a start. The old idea of letting the weeds get up and then killing them is exploded; market gardeners don't believe in it. We don't propose to have them get up at all. Thorough cultivation improves the crop, makes it larger, makes it less costly, not only because it is larger, but because it is less work. Therefore, clean and thorough cultivation is one of the most important things in raising garden vegetables; but no more important there than it is in growing crops upon the farm. No farmer can afford to raise a crop of weeds. Most farmers do it, but they cannot afford it. I have raised about as good a crop of weeds, I presume, as any one in this room, and I think it was the most unprofitable crop I ever grew. There are a great many objections to raising weeds. One is, you exhaust the soil, to some extent. Another is, if you don't cut them off before they have gone to seed, you will fill the land full of seed, which it will take years to get rid of, if any of it is ploughed in very deep. Take Roman wormwood, for example, which will not germinate if it is two inches below the surface. You cannot reach it, therefore, all at once, and you will be troubled a great while for a little neglect in allowing the weeds to grow.

All farmers should endeavor to make some improvement in their vegetables. It is a very easy matter, I think, to improve your varieties by cross fertilization. Take any variety of field corn, and I have no doubt that inside of five years I could improve the productiveness and earliness of that variety from ten to twenty per cent. You see the point. If that is true, and it could be done throughout the State, you see what an addition it would be to the corn crop, simply from having good seed. Now, if you cross the seed of any varieties, and get what you want, the tendency of that seed will be to revert back to one of the original parents; perhaps the one you want least. I might illustrate that by taking corn. Suppose you have a very early variety of corn. Earliness is usually associated with fulness of size, and small corn is not usually so productive as large. You want to retain that earliness, and at the same time increase the size, and you cross that with a larger variety. Well, after you have got what you want, then will come your trouble, to some extent. You will want to save the seed, and the most natural thing for a farmer to do is to save the largest ears that grow on his field, and it is just those ears in which the tendency to run back to the original parent, which was late, is most strongly developed. If you plant the seed from the largest ears that are produced on your field for three or four years, you will very nearly run that corn back to the original late parent; whereas, if you select just the ear you want, at the time it is maturing, so as always to get size and earliness, you will perpetuate the desirable variety, to a considerable extent.

Now, in regard to specialties in farming,-specialties in raising different crops. Every farmer here can probably think of some person in his own town who is very successful in raising potatoes, as an illustration. The first thing a farmer would say is, "That man has a better soil on which to raise potatoes than his neighbors"; but you will find, if you look carefully, it is no such thing. Perhaps that man has gone into raising potatoes largely, and it becomes a matter of vital importance to him to know how to do it in the best way; therefore, the first thing he does is to look up that matter. It is his trade to raise potatoes, and he perfects himself in that business. Other farmers assume that it is all owing to his soil, but it is not so; he knows how to grow them; knows how to prepare the soil and the seed. I have experimented with potatoes, although I do not raise them much for market, for it pays me better to do something else, and I know I can raise a good crop of potatoes at any time if I will comply with certain conditions. That is, I know that if I take a piece of grass ground, and let it run until the middle of May, until the grass has got a good start (mind you, these would not be early potatoes), then put on a heavy dressing of coarse manure, and plough it in four or five inches,-four would be better than five,-I have got the conditions requisite for a good crop. What have I done? I have done just what has been recommended here. I have composted that manure completely. I have turned it over with the grass sod next to it, and piled four or five inches of earth on top of it. I have a soil under it, which saves any gases that might otherwise be lost; I have a soil above it; I have that sod lying there within five inches of the surface. What have I got? Why, gentlemen, you will see at once, that I have made a perfect seed-bed to grow those tubers in. Now, after turning that over, the sod not being ploughed under very deep, you see it would become necessary to roll that ground to prevent the harrow from pulling up the sod. I do not want the sod in my way. I roll it down, harrow it, or work it over with the cultivator or something of that kind. Then I furrow it, and I have used, in addition to the manure, superphosphate in the hill.

You may talk about the necessity of potash for potatoes. I am not going to dispute about that. But almost all soils in Massachusetts, even the most sterile, have more or less potash

locked up in them, and the effect of that nitrogenous manure which I have applied is to liberate that potash, to make more potash available to the plant.

Now, I know that as large potatoes as I ever saw grown have been grown by myself, three or four years in succession, in just that way, whereas, in some other ways, perhaps I should not have got so large a crop. Of course, I am not prepared to tell you how many bushels I raised to the acre, but as many as has been mentioned here to-day, to say the least.

The only other matter of which I shall speak, for I do not want to take up too much of your time, is the necessity of fighting insects at once. In market gardening, you must not give them any chance. If any insects appear, you must contrive some way to fight them. The insect that perhaps annoys me more than any other in the growing of cabbage is a little maggot that works under ground. Perhaps you will find twenty or thirty on the stem of a cabbage. That insect troubles the Arlington gardeners a great deal, but they protect themselves in some measure by high manuring. One of my friends said, "If the maggots don't eat up my cabbages in two days, I will drive them up so big that they can't hurt them." That is the whole secret of this matter, if there is any secret about it.

Mr. WARD. Do you find any objectionable quality in potators raised in the manner you have suggested?

Mr. Moore. No, sir. I don't believe in a good deal of the talk that we hear about tasting the manure in all the stuff that is grown. If that was true, you would have a pretty strong taste of manure in the vegetables grown around Boston.

QUESTION. How deep do you put your seed?

Mr. MOORE. I cover them sufficiently to have them germinate—two or three inches.

Mr. Johnson. As no one else seems to be inclined to say a word, and as I belong to that good old county that Dr. Durfee has spoken about to-day, and always feel proud to claim that as my birthplace,—more so, I have no doubt, than the county feels to claim me,—I will say, that we claim to stand at the head of all the other counties of the State in regard to vegetable gardening, and almost all other products. We have heard from Capt. Moore, who has the science of growing vegetables of all kinds, as well as fruits, that the secret of growing them successfully is

in the preparation of the soil. The same thing is true with respect to the growing of farm products. Then the next thing is the manure; and I am very much obliged to my friend Moore for referring to it, for it reminds me that I should have stated more particularly yesterday, when speaking of my crop of corn, in regard to the manure, that it may be understood how I got over ninety-three bushels to the acre. It is in the preparation of the soil, to begin with; it is in the preparation of the manure in the second place, and in the care of the crop in the third place. In regard to the preparation of the manure, I should say that potatoes, or any other seed, will grow a great deal better in manure that is thoroughly decomposed, not burned, than in green manure. It should be thoroughly decomposed and made so fine that as soon as the corn or the vegetable starts, the roots may take hold of that manure; and it is very essential that there should be manure enough upon the ground to carry the crop through the season. That I suspect is the whole secret of raising large crops.

While I am up, I will say, that I have been to Capt. Moore's farm, and seen the care and skill with which he conducts his business. Everything is in its time with him, and everything in its place. The captain has made an admirable appearance here to-day, but if you want to see Capt. Moore in his glory, you must go to old Concord, and see him on his farm.

Col. STONE. There is one point which I had hoped to have heard discussed here to-day which has not been referred to. I allude to the great importance of a rotation of crops in farming, and in market gardening also. We have a gentleman here who, if he sees fit, can discuss that question ably. Perhaps most of you had the pleasure of listening to him, some years ago, when he gave an admirable lecture on the subject. I refer to our worthy Secretary. I believe the time is coming when that point will be regarded as one of great importance. When we have settled these minor points, we shall learn, that in order to get the whole profit of the manure, the whole virtue of the soil, a rotation or succession of crops is necessary.

Now, gentlemen, I am not a market gardener; I am not what you would call a farmer. My department has been mostly the nursery, a department which does not properly come in here; but in the prosecution of the nursery business, (I think my

friend Hyde will bear me out in what I say), I have witnessed most extraordinary effects follow the carrying out of this principle of the rotation of crops. To illustrate the point I wish to come at, and which I wish to enforce upon your notice, I will say that in the preparation of the ground for apple-trees, for instance,—for we cannot grow pear-trees successfully in my immediate neighborhood,—we are obliged to prepare it very nicely, in order to be successful; as nicely as my friend Moore would prepare it for his vineyard or for garden vegetables. We plough deep, manure thoroughly, and then, in setting out the small plants, the seedling apples, we calculate that the ground is in a fit condition to carry those trees almost to their maturity. Now you will see that the growing of a crop of apple-trees successfully, which requires three or four, and sometimes five years, exhausts the soil of all its ingredients which the apple-tree calls for, or perhaps any deciduous tree calls for. A nurseryman who understands his business knows that it would be folly for him, after he has taken off that first crop to attempt to put a second crop upon that land, even if he manured equally as well as be did the first time, because his crop has exhausted the soil of certain things which are peculiarly necessary, and which can only be found in newer soil. My practice has been this: after my apple-trees have been removed, I find the land admirably adapted to the growth of evergreen trees. You all know what evergreen trees are—the spruce, the arbor vitæ, the hemlock, &c. Without remanuring that land, without any repreparation, almost, except it be ploughing, I can set out evergreens, and get an admirable crop, because the elements which the evergreens call for still exist in that soil; because the elements which the evergreens call for are different from those which the apple-trees call for. I grow them three years, and then they pass away. What is the condition of the soil then? It is exhausted for the evergreen, it is exhausted for the deciduous tree, and you might say that the soil was entirely exhausted. But such is not always the case. I may plough that land thoroughly and lay it down to grass, without even putting any manure upon it, and raise a splendid crop of grass. Why? Because the grass calls for different elements in the soil from either of those kinds of trees. You see the point. It is so with the successful farmer. The time is coming when he will be

able to tell you just what crop to plant first, just what crop should follow that, and just what crop should follow as the third one, to get all the virtues of the soil, and keep it in good condition. Well, after I have taken off a good crop of grass for a year or two, that ground may be in very good condition, because it has recuperated itself, and the virtues which were exhausted by the preceding crops have been restored. Then I will go to work, remanure and prepare it, and perhaps raise another crop of apples, and so go on. That is the point I wish to bring to your notice.

Mr. WARD. Mr. Johnson stated that he had raised ninetythree bushels of corn to the acre. I would like to inquire the distance he planted his hills apart, and whether he planted it in drills?

Mr. Johnson. Three feet and a half one way, and as near three feet and a half as they could be the other way. They might fall two or three inches short, on the average.

Mr. FLINT. It occurs to me that the members of the Board have done most of the speaking this afternoon, and, in fact through the day. I am sure there are very many experienced cultivators of vegetables in this vicinity,—in Dighton, Somerset and other neighboring towns,—who could not only enlighten the Board, but interest the audience, and I really hope we shall have an opportunity to hear from some of them.

Judge Lapham. At the present moment I am not much of a farmer. My early experience was in that business, and some part of my subsequent life has been connected with it, and it has been a source of very great gratification and pleasure to me to listen to the remarks that have been made here upon the subjects that have been under discussion. Perhaps it may not be amiss to say that the suggestions which have been made by the chairman in regard to the rotation of crops correspond to the operations of nature. Among my early recollections is one of a forest of oak, chestnut and walnut of very large growth. Some of those trees were cut down, and there came up, in the midst of those large old trees that were left, as thick a growth of white pine as I ever saw anywhere, and the trees grew with remarkable rapidity, and with entire thriftiness and health. That entire growth of pine was subsequently cut away, and and there came up a growth of maple, chestnut and oak; there

was scarcely a pine-tree on the field. Therefore, if we observe the handiwork of the all-wise Beneficence, it would seem to strengthen the conviction to which you have arrived in reference to the succession of crops. Moreover, in those countries where agriculture has been pursued for centuries, they have found by experience that certain crops exhaust certain elements in the soil, and therefore a different crop flourishes more advantageously as the successor of the one by which those elements of the soil were exhausted. There is such a thing as adaptation of the soil to the plant that is grown upon it. I recollect that in my boyhood a neighbor of ours, not more than half a mile from our house, could raise balm in great abundance, but could not succeed in raising sage, while my mother could raise sage but had no success in raising balm. The result was an interchange of balm for sage, without duty. It was an illustration of the reciprocity principle. Whether the production would have been promoted if there had been a duty placed upon the articles, I leave for others to determine; but that was a matter of mutual exchange - of free trade - and resulted advantageously. The conclusion to which I arrived in relation to it was this: that there were certain elements of adaptation in the soil where the balm grew that were not adapted to sage, and, vice versa, that there were certain elements in the soil where the sage grew that were not adapted to balm. So that, if we will devote our attention to observing the facts as they arise, and endeavor to seize hold of, and profit by, those which come under our observation, we shall, I believe, make progress in relation to this matter of agriculture in all its departments. Therefore, I regard that man as the most successful cultivator who most closely and keenly observes, before entering into the cultivation of the crop that he may wish to raise, the conditions of the soil in which it is to grow; and every attempt to force a growth contrary to the existing conditions of climate and soil must in the long run result in failure. Some peculiar conditions of climate and season in a particular year may operate to make the attempt successful, but in the long run, what is not adapted to the soil will not be profitable to the farmer.

Then, if we look at this matter further, we find that in certain sections of the country fruit is grown very successfully—in some localities, apples; in other localities, pears. So far se

my observation goes, certain kinds of pears will flourish abundantly in certain localities, and not in others. A gentleman from this place who went to New Hampshire,-I think it was near the town of Meredith,-told me he tried pears, and found that the trees would grow with great thriftiness for a few years, and then they would die. He repeated the experiment for a succession of years, and always with the same result. There must have been something in the climate or soil that was not adapted to the pear. I suggested surrounding them with coarse sand or fine gravel, and he told me he would try the experiment. do not know what has been the result. I believe an analysis of the outer bark of the apple shows fifty per cent. of lime. What is the result of observation? We find that the regions where the apple is most productive are those regions where limestone is most abundant, other things corresponding. Now, in the early orchards of Massachusetts and New England there was sufficient vegetable matter, with some lime, in the soil, to produce results corresponding with the hopes or wishes of those who planted the trees; but in the course of years those elements became exhausted, and hence we do not have such remunerative crops as formerly. Can we not supply the deficiency by the application of lime? That is one of the necessary elements in the composition of fruit. I do not know how far that may be practicable. I was speaking to my friend Slade here on the subject, and he told me that he had in some instances applied mortar and old plaster to trees, and found that the trees were more productive and the fruit fairer.

Now, in order to be successful farmers, it is essential that we should study the elements that enter into the composition of whatever we wish to produce. We find, in relation to certain grasses, for instance, that by the application of certain mineral manures, some fertilizing elements are drawn from the atmosphere, which, in combination with the fertility of the soil, insure a good erop.

When I was a boy I remember there was an old field that was so poor that it would not produce sward enough to hold together. It was ploughed up and potatoes raised on it, some manure being placed in the hills. There was no grass seed sown, but to my surprise then, as I was less experienced then than I am now, a bunch of clover came up the succeeding

year in almost every hill where potatoes had been planted. The explanation, as I apprehend it, was, that plaster was put upon the potatoes when they were growing. Whence came the seed, how or in what way it originated, or where the germ came from, I know not, but the fact I do know as a matter of ocular demonstration.

A few facts of that kind will go to show that the nourishing elements of plants may come, to a certain extent, from the atmosphere, but they come mostly from the soil, and that soil must be adapted in its nature and character to the condition of the plant that grows upon it.

Last evening I was greatly interested in the lecture upon Utah. In that lecture Prof. Chadbourne stated that since the Mormons settled there and commenced their system of irrigation, Salt Lake had risen year after year, until it had risen many feet. You will recollect that he said that Prof. Henry had suggested that the theory that trees produced moisture was not well founded, and that perhaps the professor was right. It seemed to me that he refuted the theory suggested by Prof. Henry, because here were rows of trees set, here were grass and vegetables growing, and these combined, as absorbers of moisture, would have a greater effect than a forest, - at least in my apprehension. It seems to me, therefore, that so far from weakening the theory that forests produce moisture, the statements of the lecturer corroborate and strengthen that position. And in connection with that matter, I will say that I believe time will show that the effects of the tornadoes that sweep over our Western States may be to a great extent averted by the planting of belts of wood, and that the terrible drouths to which they are subject may also be avoided, to a considerable extent, by the same means. And I do not speak in relation to this matter without confirmation from high authority, because one of the greatest writers of France - Chaptal - corroborates that idea in the position that he takes in relation to the effect upon climate of the cultivation of the soil. We read, many of us, in our youth, of the desert of Sahara, over which, it was said, nothing but hot winds blew; but further examination has shown that, instead of being a vast desert, entirely barren, it has broad oases or fertile spots in it, and who can say that the time will not come when even that desert may be made to blossom as the rose, and

become as fertile a region as Utah has become? In view of the progress that has been made in the last fifty years in relation to agricultural implements, and in all the sciences connected with this great matter of agriculture, I believe the time will come when that desert and many other places now regarded as barren will be made to blossom as the rose, and yield food for the sustenance of mankind.

I have had some experience in relation to the reproduction of animals, which some of my friends have regarded with considerable doubt at any rate; but I think I can state, without indelicacy, that, so far at least as domestic animals are concerned, the sex may be to a great degree determined by the course that shall be pursued in relation to their treatment. At least, such has been my experience, and I believe it to be a well-established fact. We are yet in our infancy in relation to all these matters. We have advanced somewhat from the condition of the people of the East, where they plough with a crooked stick, but we have been very slow in making these changes. I recollect when I was a boy, my father wanted to get a new plough. He had seen a cast-iron plough, but he was doubtful about its merits, and he went away with the determination to buy an old-fashioned plough. but inasmuch as he could not get one, the dealers where he went having nothing but the new kind of plough, he brought home, with fear and trembling almost, a cast-iron plough. it a week in the spring of the year, and if he could not have obtained another, at the end of that week a hundred dollars would not have purchased it. It is just so with regard to many things. We are but in the beginning of progress, so far as the observation and examination of the operations of nature are concerned; but we are on the high road to progress. None of us will live to see the advancement that will yet be made in all matters pertaining to agriculture.

Col. STONE. I have been very much pleased with the judge's remarks on this occasion. He has touched upon'a problem which I believe time will solve. I believe in the goodness of God. I do not believe He has ceased creating. He is creating every day, and if we are disposed to look for the evidence of it we shall find it. The gentleman's remarks on that point struck me very forcibly.

Adjourned to evening.

## EVENING SESSION.

The Board reassembled at 7½ o'clock, to listen to a lecture by Mrs. Ednah D. Cheney. The audience was a very large one, and the speaker was heard with manifest interest and pleasure.

## THE HORTICULTURAL EDUCATION OF WOMEN.

BY MRS. EDNAH D. CHENEY.

Ladies and Gentlemen:—I do not come before you to-night as an expert to give you any information as to the details of the noble science of agriculture, but only to present it to you in its relation to the great subject which is engaging all thoughtful minds in our community,—the education, employment and condition of women. I do not hope to give you any new facts, but only, if possible, to quicken and animate your thoughts, so that you may see the wide vista of usefulness and blessing which opens before us in the extension of this healthful pursuit to thousands whom custom, prejudice and inattention have hitherto kept from it.

Neither can I claim the charm of novelty for my subject. It is no new idea that women should till the ground and engage in all the varied duties of horticultural life. In the sober prose of fact, we find her in savage life bearing all the hard work of providing for the nourishment of the family. You remember the pathetic song of the negroes over Mungo Park—

"We pity the poor white man;
He has no mother to bring him food,
No wife to grind him corn."

The pleasures of the chase, the excitements of war belong mainly to man; but woman does all the hard work. It is a great step in civilization when man begins to share her labors, and work is put upon a footing of honor.

In the inspired realm of poetry we find woman the helper in the field and the garden. The great poet, John Milton, all whose sins towards womankind may be forgotten in the large and beautiful vision he has given of our first mother, makes Adam cordially extend his invitation to her—

> "To prune these growing plants and tend these flowers, Which were it tollsome, yet with thee were sweet."

It is when thus working together, that their happiness wins the admiration of the angels of heaven, and draws them down to converse with Man. When Satan seeks to work mischief, his first step is to divide them.

I ask you to proffer this same invitation to the women of Massachusetts, to the thousands of women who need this occupation for the benefit of their health, for the increase of their means of support and usefulness, and for its educational value, in developing their mental and moral powers.

Do not say the career is open and they need no invitation: "God helps those who help themselves." We cannot live thus hardly with each other; we need mutual help, support and encouragement. True, God does not help those who do not help themselves, but he is continually inviting, encouraging and stimulating us to exertion; and we must all do the same good service to those whose energies are paralyzed by prejudice, custom and self-indulgence.

We ask for women only a fair field and no favor at the last; but those who hold the field must open the gates for them; not always oblige them to climb over the high walls, guarded with many a pointed spike of sarcasm and contempt. The few with great gifts and heroic energy of character will always make their way through all obstacles, but it is necessary to make a highway for the multitude to walk in.

Even now women share largely in the out-door and farming work of the world, but it is usually only as driven by excess of poverty, and in a low and degrading manner, which drives those of any higher culture or refinement as far from it as possible.

The slave-driver found nothing in woman's constitution which kept her from the cotton-field, where, bending hour after hour over her task, the lash came down upon her if she rose to straighten her weary back. No wonder that the emancipated colored women shrank at once from even the lightest out-door labors of gardening, as the men for some time preferred raising any other crop to cultivating cotton.

We find that in England, in 1861, there were among women fifty-six thousand three hundred and fifty-eight out-door laborers. But their work was not only of the poorest kind and very ill paid, but generally lasting only for a small portion of the year.

We desire to elevate the out-door labor of woman from this crude, savage, ill-paid, ill-regulated work, into an industrial calling, which shall fitly employ her mind as well as her body, and which will give a range of occupation suited to every degree of culture and refinement, from the most accomplished lady to the most robust and needy woman.

All classes need new light and life in this direction, and the influence will spread in both directions. Work will be elevated by mental culture, and intellectual education will be broadened and invigorated by an alliance with work.

The first point I ask you to consider with me, is the imperative need of out-door life to develop the physical constitution and preserve the health of women. It would seem needless to argue the importance of the health of the mothers of the race, to farmers and horticulturists, and yet strangely enough it has come to be considered an inevitable thing that women should be sickly in body and feeble in constitution. From the undeniable fact, that on the average, woman is physically less strong than man, the astounding inference has been drawn, that the weaker she is the more of a woman she is. Because she is a little smaller in size than man, reduce her physical proportions to the minimum of size; because she is a little less strong, make her as weak as possible. This would be strange reasoning to apply on the farm or in the garden. The willow is not so study as the oak. Shall we starve it into a puny sapling? This is not the method of nature. She is constantly seeking to restore equilibrium. She carefully balances the masculine and feminine traits by the double parentage, and by the transmission of strong peculiarities in the opposite sex. She seeks to lessen differences, and in the finest types of humanity there is always something of the characteristics of both sexes. So art has followed her in its representations. The Greek Apollo has the beauty and grace of a woman, with masculine strength and fire; the Diana and the Minerva have masculine freedom and courage, with feminine beauty and majesty. Only in the extreme representations, as in Hercules and Venus, are the attributes of sex strongly emphasized. In later art, the most revered of men-Jesus of Nazareth-has been always represented with so much of the feminine attributes, that our masculine age is now protesting strongly against the painter's ideal.

But our one-sided civilization has sought to perpetuate the widest departures from the original type, and to produce a monster of curious formation, in which weakness and imbecility are the predominant traits. This physical degradation of woman has reacted upon the whole race,—the puny, sickly mother transmits her defects not alone to her daughters, but the sons partake of the very infirmities which they have allotted to their sisters.

It would be a curious study to trace out the extreme limits of muscular power in woman. Mr. Crafts told us last year of the Amazonian warriors of Dahomey, who take equal share with the men in all the dangers and toils of war, and who often enter into direct competition with them, and beat them on their own ground.

The Comte de Paris found that in some of the iron works in England, women are employed to stack large bars of iron after they have been hammered. For this labor, which no strong, healthy man would undertake for less than two shillings and threepence a day, they are paid only a shilling.

In Germany, Switzerland and France, women take part in all the labors of the field, and are harnessed with the cows into the plough, while the man walks lazily beside them.

We know what severe field labors the Southern women underwent under the oppression of slavery; a Southern planter once told me that women ploughed better than men.

Irving, in his Life of Mohammed, gives the following striking account of the strength and courage of the Arabian women, in the wars which were carried on for the extension of the Mohammedan religion. It shows how hardy were their habits, and how little their education differed from that of the men.

If according to the vulgar but erroneous idea, the Mohammedan did not let woman have a soul with which to take her share in the joys of the next world, he at least allowed a free development of the body, so that she had some chance for life and health in this. Irving writes:—

"This done, the captors went into their tents to carouse and make merry with the spoils, leaving the women among the baggage, bewailing their captive state.

"Caulah, however, was the worthy sister of Derar. Instead of weeping and wringing her hands, she reproached her com-

panions for their weakness. 'What!' cried she, 'shall we, the daughters of warriors and followers of Mohammed, submit to be the slaves and paramours of barbarians and idolaters? For my part, sooner will I die!'

"Among her fellow-captives were women, descendants, as it is supposed, of the Amalekites of old, and others of the tribe of Himiar, all bold viragos, accustomed from their youth to mount the horse, ply the bow and launch the javelin. They were roused by the appeal of Caulah. "What, however, can we do," cried they, 'having neither sword, nor lance, nor bow?"

"'Let us each take a tent pole,' replied Caulah, 'and defend ourselves to the utmost. God may deliver us; if not, we shall die and be at rest, leaving no stain upon our country.' She was seconded by a resolute woman named Offeirah. Her words prevailed. They all armed themselves with tent poles, and Caulah placed them closely side by side in a circle. 'Stand firm,' said she. 'Let no one pass between you; parry the weapons of your assailants, and strike at their heads.'

"With Caulah, as with her brother, the word was accompanied by the deed; for scarce had she spoken, when a Greek soldier, happening to approach, with one blow of her staff she shattered his skull.

"The noise brought the carousers from the tents. They sur rounded the women and sought to pacify them; but whoever came within reach of their staves was sure to suffer. Peter was struck with the matchless form and glowing beauty of Caulah, as she stood fierce and fearless, dealing her blows on all who approached."

These instances show that there is nothing in the feminine constitution itself which prevents woman from bearing the hardest out-of-door work. The next question is, What degree of this work is compatible with the greatest health? Does excessive toil unfit her for the holy and beautiful functions of maternity? Without entering into a full discussion of this question we may assert, that while excessive compulsory toil impairs the health and disorders the functions of the system, it is less injurious than self-indulgence and idleness. Is there not a medium between the Amazonian warrior of Dahomey, or the slave woman of Georgia, and the pampered woman of

fashion, whose only labor is to kill the time? "Dire labor, indeed it is, and weary woe."

Indeed, so great has the disbelief in woman's physical powers become, that it is hardly thought possible that health can be her portion. Michelet, whose chivalric respect for woman amounts almost to adoration, considers her wholly as an invalid, a being whose tenderness and weakness call for the support and care of men and so develop beautiful traits in her, and kind and generous qualities in him.

Should this be the ideal of American women?

Is it not rather the effect of custom, derived from Oriental despotism which believes woman to be safe only within four walls, and dares not trust her God-given nature under the light of God's free heaven?

We must strive to make the home include the garden, orchard and the field, as well as the cooking-stove and the nursery. Health, work and love will make a home, which will be a safer shelter for woman's purity than prison bars and jealous keepers. We need to raise the standard of health for woman, so that she shall not be content with the life of semi-invalidism, which is the position of the majority of the sex at the present day.

How many a father toils night and day, to lay up a fortune for his daughters! What a fortune he might give them in health, strength and enjoyment, if he would only cast off from them the trammels of custom and prejudice!

How much money the quack doctor would make out of a medicine to cure the sufferings of woman, but the true medicine which is free to all, work and fresh air, is, like all God's best gifts, so freely offered that it is neither accepted with thankfulness or used with care!

The most trying and painful form of invalidism, which is strikingly characteristic of our American life, is nervous weakness and irritability. It is superfluous to argue the existence of a fact so well known to all medical practitioners, and we fear equally familiar to almost every home circle. This state is unquestionably due to the sedentary and confined life of women, and the intellectual stimulus of education, without the healthy corrective of physical exercise and out-door life.

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A striking proof of this is found in the fact, for which I have the authority of more than one German physician, that nervous diseases are rapidly increasing among women in Germany. This is largely to be attributed to the exciting school life.

Admirable as the Prussian system of schools is in its intellectual processes, it fails to recognize the divine laws for the development of life and health. It is part of the machinery which cramps the individual to perfect the system. That culture which makes soldiers of men and invalids of women, is not the perfect model for our republican institutions.

Contact with the vegetable world seems to be nature's corrective for excessive mental action in any direction. The touch of mother earth renews strength and energy exhausted in life's hardest conflicts.

As the air is purified by the life and growth of plants; as the water is kept sweet by the balance of animal and vegetable life, so the fresh, unspoiled life of nature seems to renew human life, to cool its feverish heat, restore its wasted energy, and bring it anew into harmony with the universal order of things.

Gardening requires simple, healthful habits. It is now as in paradise that the freshness of the morning invites to labor—

"Awake! the morning shines, and the fresh field Calls us; we lose the prime to mark how spring Our tender plants; how blows the citron grove; What drops the myrrh, and what the balmy reed; How nature paints her colors, how the bee Sits on the bloom, extracting liquid sweet."

The gardener must be up early in the morning, but she need not keep midnight vigils; her charges go early to sleep and will not awaken her with their cries. Even the greenhouse is not kept so hot as our sitting-rooms and workshops. The plants are as sensitive to coal gas as our children's lungs, and will show the presence of bad air by unmistakable signs. But it is the out-door life of gardening which is most precious. It is not, as some suppose, confined to a few short weeks of summer; but from the first of April, or even earlier, when the snow-drop begins to droop its modest head, to the last of November, when the golden chrysanthemum gathers up the glory of the

summer, and breathes it out in its rich bloom and healthful fragrance, there is always something to be done in the garden.

Who does not experience the exhilarating effect in going out from the busy city into the woods and fields? And the nearer we come to nature, the closer our relations with the earth and its vegetable productions, the more strongly and sweetly do we feel this beneficent power. Especially is this influence good in all the grief and trial which come from emotional relations, from wounded sensibilities and crushed affections, to which woman's nature and circumstances render her so especially liable. There is no reproach, no taunt or sneer from the rose or the lily, and the fragrance of the flowers she tends silently soothes the sorrows of which they are unconscious.

Without probing the secrets of her heart, "they guess at the wound, and heal with secret hand." They minister to her who tends them with love from their Divine Creator, and she again is rich in the power to carry this message of love so beautifully written out to the sufferers who are shut out from their native world.

The physician may send his rich patient to the mineral springs, the seashore or the mountains, but the majority of women must find their restorative within the circle of their daily activities.

During the prevalence of the great cholera epidemic in the decade between 1830-40, the city council of Berlin assigned all the vacant lots of land in the city to the poor women to be used for gardening purposes. On them they raised vegetables for the use of their families. The result was a very great improvement in the health of the city and of the women engaged in the work.

In the vicinity of Boston many German women devote themselves to out-door work during the summer months. They are engaged in gathering smaller fruits and vegetables and weeding out lawns (which they are said to do much better than men), and in the laying out and preparation of gardens.

In many instances they have refused much higher wages for in-door work of various kinds, saying "We will not work in-doors while we can get out-of-door work. The rich ladies get their vacation in travelling, we must keep up our health and vigor by labor on the land." A school-teacher finding her health giving out from her mental labors, and unable from the small amount of her salary to seek refreshment at expensive watering places, resolved to devote herself to her garden during her summer vacation. She found in the autumn that she had gained a greater degree of vigor than ever before, and that instead of a doctor's bill to pay, she had a hundred dollars in her pocket as the result of her summer's work.

Our climate is a pretty tough one, but like every other brave enemy, so often a friend in disguise, the only way to conquer it is to meet it boldly. None suffer so little from the weather as those who are out in it every day, and all day. Wise old Dr. Jackson used to say, "that the danger was in staying in the house," and it is most often there, by what in poetry we call "the family hearth and cheerful fireside," but which is too often in fact the air-tight stove and the hot-air register, that catarrhs and consumptions begin, and not out in the east wind or north-east snowstorm.

The next consideration which makes the wider opening of horticultural pursuits to women of great importance, is the wide field of profitable labor which it opens. Undoubtedly the question of woman's labor is an intricate and difficult problem; it is complicated by the fact that she is fitted by nature for part of the duties of life, whose value is so difficult to estimate in money that the world has settled the question by usually considering them worth nothing at all. The savage has his easy way of solving the problem of woman's work. He settles it that woman is to do all the work and he—none! This has the merit of simplicity, but has not on the whole been found especially conducive to domestic felicity or the development of higher qualities in either man or woman.

Chivalry took the other view of the subject, and exalting the lady into a porcelain angel, proclaimed her to be only the ornsment of society. This, too, was consistent as regarded the lady of high degree, and chivalry took small note of any other. The noble lady was the ward of the state or king, who was bound to provide her with a dowry and—a husband. But at present we vibrate between these two extremes. The working-woman can do any work she pleases for very small pay, as in the Tyndale iron works, and the fine lady may do absolutely nothing, if she

inherit a fortune or have a rich husband to supply her needs. Between these extremes the great mass of women suffer from wasted energies, idleness enforced by prejudice and custom, feverish excitement caused by immethodical and ill-regulated work, and monotonous toil at the needle or the loom, repaid by a scanty pittance, which furnishes them no opportunities for self-culture or recreation.

A few facts in relation to woman's work in Germany will illustrate this point. At present there is so much admiration for German institutions that these instances of what woman's life is there struck me very forcibly, and as the same causes exist here to a great degree, the results must be somewhat parallel. In one city of two or three hundred thousand inhabitants there are 43,417 unmarried women who earn nothing, who contribute nothing to the national support or prosperity, but are mainly supported by relatives, the utmost they do being some little contribution to household work. But alongside of this is the painfully significant fact, that eighty per cent. of all the recipients of alms are widows, women who having given their lives in unpaid industry or idleness, and depended upon a man for all productive work, find their resources cut off by his death, and are absolutely unable to take care of themselves.

Out of a hundred widows in Berlin, eighty-three are obliged to earn their living. Another item shows still more plainly how badly this social economy works for women.

With advancing age the number of men who work for a living decreases; the number of women increases. The average man can from his work lay up a support for his old age. The average woman spends the best years of her life in idleness or in working for her husband and children only, and in her old age has to go to work for her bread.

Undoubtedly the case is worse in Berlin than it is here, for more of the old feeling exists against women's work there than here, but the prejudice is not obliterated, and few young women above the pressure of absolute want are taught to look upon their own exertions as the means of their future support.

We cannot afford economically to lose the work of so many women. With a large majority of women in Massachusetts, the productive industry of our State must gradually fall behind that of other communities, unless intelligent and thorough work is

done in due proportion by women as well as men. In the report of your Secretary, I read that the great demand of Western Massachusetts is for more laborers, and they call loudly for the Chinaman. Let the Chinaman come by all means, but give us work for the women first. Gardening is an occupation especially fitting to women, not only on account of its hygienic value, but by its power of adaptation to all the circumstances of her social life. We are quite ready to say, with Margaret Fuller, "Let them be sea captains if they will," and yet we can often imagine it a serious interruption to the home circle to have the wife and mother absent on a whaling voyage. Neither does the hum of the machine shop or the factory add much to the pleasure of the fireside. But the field, the orchard, the garden and the green-house, instead of detracting from the duties and joys of home, will only add to them health, freedom, comfort and beauty. Instead of the invalid mother lying on her couch, entreating her little ones to spare her poor weary head, we may have her out in the fresh air, with the children about her, aiding her in the labor which is to add comfort to the home, by supplying wholesome and nourishing food, and which will give grace and beauty to the home surroundings. She may superintend the work on a large estate, if she have abundant means, or with a little quarter-acre lot, she may even at odd moments raise the potatoes, beans or cabbages which are to give variety to the daily meals. Let me give you a few instances from my own observation.

In the neighborhood of Boston, a distinguished lady has now for many years found her chief interest and occupation in the management of her green-house and garden. With ample pecuniary resources, she has been able to indulge her taste, in producing the finest specimens in quality of flowers and fruit. She constantly takes the prizes at horticultural shows for peaches, plums, strawberries and other fruits, as well as flowers. Finding the men whom she employed unfaithful or incompetent, she took a young lad whom she has educated to carry out her plans. He is now, after fifteen years' experience, a skilful gardener, able to relieve her of all details in the care of her plants; while she enjoys the success of her plans and the perfection of her work.

In my own town are two young French women, who beside their labors in teaching, have cultivated their garden with their own hands, raising all the vegetables for their own use.

In contrast to these women of high culture and large opportunities, rises up before me the figure of a brave Irish woman, who when an invalid daughter and three young children were left to her care, worked all day in a mill, and in the hours before and after her daily toil with her own hands dug and planted her little garden, which, as she said, "always furnished them with provisions, so that through the whole dark period of the war, they never failed to have enough to eat."

This occupation is also specially adapted to women by its educational value. The great defect in woman's education is, that it has no practical bearing. She learns statements, tables and facts, but seldom rises to the perception of laws and their application.

Although exercising the most important function in the care of the health and life of the human race, which during the dangerous periods of infancy and youth is almost entirely confided to her care, she is yet commonly ignorant of physiological laws, and accustomed to base her actions upon vague tradition, or a blind reliance on outside authority. If her children are taken sick and die, she esteems herself unfortunate or providentially afflicted for the good of her soul. But she rarely traces out the causes of disease in the insufficiency of her own knowledge, or the unfaithfulness of her care. But sympathy and religion are not expected to console the gardener for the loss of his crops. Science has plainly demonstrated that "as we sow, so must we reap," and woman as well as man when she practises horticulture, will seek out the cause why her neighbor's potatoes and cabbages are better than hers, or her rose-bushes are devoured by slugs while his are free. All that she learns in this department will have its value in her maternal and home life. And then again, the love of beauty, so prominent in woman's nature, may find here its full development. From the laying out of an estate to the arrangement of a bouquet, there is opportunity for all the order, symmetry, color and sentiment which can be expressed in outward symbols. Use, love and beauty are all combined in the work, and from the solid foundation of material economy, may be built up a structure of

grace and beauty, which lifts her occupation into the region of art.

Moreover, the very laws and conditions of vegetable life are full of instructive analogy to human life. The mother will gather many a lesson of wisdom in rearing these mute but sensitive creatures, which will guide her in bringing up her more precious charges. I remember the comfort which a young mother, over-anxious about a delicate baby, received from a horticulturist who told her that he had often observed his plants which seemed quite feeble the first year, gain health and vigor in the second year by judicious care. The sturdy, healthy boy now rewards his mother's faith in nature's teachings. So the garden is full of the most suggestive illustration of moral and religious truth. The most spiritual of teachers told us to "observe the lilies how they grow"; and drew precious lessons from them. Often when the mother seeks diligently for words sacred enough in which to impart the holy mysteries of religion and life, she will find, as Wilkinson has wisely said, that the processes of nature in the growth and development of plants will supply her with the pure and beautiful symbolism she needs in which to clothe her thought.

But the full value of Horticulture for woman, either as improving her health, increasing her industrial resources or developing her mental powers, cannot be gained by desultory attention to this work regarded only as a elegant amusement, or as an adjunct to ordinary pursuits.

That the stream of culture may flow beneficently through all the community, we must raise the fountain-head high; at some points women must devote themselves to the science of horticulture, or to the practice of it as a noble profession, giving it their best energies, and reaping its richest rewards.

Michael Angelo well said that the light of the market-place was the true test of the value of the statue. It is so with all work. The dilettante and the amateur are never sure that their faults are not partially glossed over by the courtesy of society; but the price current is no respecter of persons, and the best strawberries will command the highest price, whether raised by man or woman. It is this test of fair and open competition alone, which will give to woman's work thoroughness, finish and completeness.

We all know how much pains have of late been taken and what large sums have been expended to further the agricultural education of young men. Others can tell you the methods and results much better than I can. Within the last three years, efforts have been made in this community, to extend the same advantages to women. Miss Emma Marwedel, a German lady, came to this country, as affording better opportunities and freer scope for developing her plan of an integral education for woman, including horticulture. Owing, perhaps, to the largeness of her undertaking and to other reasons, her scheme has not met with definite success, but the large esteem and sympathy offered her show a consciousness in the public mind of the value of the thought which she represented.

Even before her arrival many thoughtful women in our own country had turned their attention to this subject.

The New England Women's Club of Boston, held many discussions upon the best means of calling the attention of women to the practice of horticulture, and after much deliberation, a society was organized in Boston, whose object was to provide a horticultural school for women. They hoped to arouse a general interest in the subject, and to prepare at least a small number of women to undertake gardening as a business.

Soon after beginning their preparations they heard of two other institutions which might at some time be in a condition to undertake this work.

It was rumored that the fine Bussey estate in West Roxbury was to be devoted to a general school of agriculture and horticulture, under the direction of Harvard College. The society conferred with some of the officers of the college, in regard to cooperation in the chosen work, by opening the school to women. But at this time they received no encouragement that such would be the case.

Mr. John Simmons also left a large bequest to found a college for the industrial education of women, and it was understood that horticulture was one of the objects to be promoted by the institution. But after conference with one of the trustees, it was found that the restrictions of the will were such, that no practical work could be undertaken for many years, and it was doubtful in what direction the resources of the fund would be used. The directors of the society therefore decided to go on with their own independent school, on a small scale; the number of applicants for admission seeming to show that many young women were ready and desirous of an opportunity for instruction. They accordingly hired a small estate near Boston, put up a green-house, and opened the school for theoretical and practical instruction in horticulture.

They have had at no time more than seven or eight pupils. This fact has been mainly owing to the large expense necessarily attending the school, as it was not endowed with any permanent funds. The cost for board and tuition was about \$400 a year, a sum usually beyond the means of women who are looking forward to supporting themselves for life. Few fathers have yet learned to look upon education for women as a profitable investment for the future.

After the school had been in operation more than a year, the society received an offer of \$5,000 from Miss Nabby Joy's estate, as the foundation for a free scholarship. It therefore became incorporated, with right to hold real and personal estate.

Last spring, when Harvard College published its programme for lectures at the Bussey Institution, it announced that the lectures on chemistry, entomology and horticulture would be open to women, with opportunity also for practical experience in the garden and in the green-houses.

Thus our venerable Alma Mater has opened two little side doors to the daughters of Massachusetts, in the university lectures at Cambridge, and the Horticultural College at West Roxbury.

We trust that ere long, obeying the spirit of the age, she will fling wide open her portals to sons and daughters alike, crying only, "All ye who thirst, come hither and drink."

In some important particulars the plan of the Bussey Institution differs so much from that of the Horticultural School, that we do not yet feel sure that it will wholly supply its place. It is a branch of Harvard College, and supposes its pupils to have already shared the advantages of that venerable institution. It therefore gives no elementary instruction in any of the sciences connected with horticulture, but only lectures on their application to the special object of the school. As young women are not admitted to the previous studies at Harvard, this puts them at a disadvantage in comparison with young men. Still, I think graduates of our good high schools would find no difficulty in following out the course at Bussey.

At the school at Newton it was especially desired to give an opening to those women who are at once anxious to make horticulture a profitable business, and we therefore tried to provide them a good home at a low price, where they could live at a cheap rate while pursuing their studies. At West Roxbury no such provision is made for either men or women, so that its advantages are at present confined to those who can live within a convenient distance.

So strongly did the directors feel the need of these additional opportunities for women, that they considered the project of establishing a home school in the neighborhood of the Bussey Institution, where young women could live and study under careful superintendence, and yet have the opportunity of attending the college lectures. But the subject is yet so wholly new, and the Bussey Institution offers so much that has never before been within the reach of women, that the directors do not at present feel justified in asking from the public the means to support a separate school.

Retaining their organization, they will use the interest of the funds in their hands, in assisting women of superior talents and persistent determination of purpose, to obtain an education in horticulture, either at the Bussey Institution or elsewhere, and will endeavor to spread the idea of the fitness of this occupation for women, and to awaken an interest among them for the work. The President, Miss Abby W. May, and the Secretary, Miss Lucia Peabody, of Boston, are a committee for the management of this fund, and will decide upon its appropriation.

Their two years' experience has been of great value in testing the truth of the ideas which I have endeavored to enforce. The pupils have been from the most cultivated classes in society.

One point of great interest was in regard to the effect of the school life on the health of the pupils. The impression seemed to get abroad that the school was to be a hospital or sanitarium

for invalids. The directors in vain tried to disabuse the public mind of this idea, and were obliged to refuse many who wished to come, for this reason solely. Owing to the house not being full, a few persons were received as boarders, who did not undertake to do their share of the work of the school. For it was no play gardening. There was hard work done, and a great deal of it. Except the original preparation of the ground, which was in a very rough state, and the tending of the furnaces, &c., the pupils with their teacher, although so few in number, which made it much harder, did all the work in the garden and green-house.

The first spring was especially cold and chilly, and the following summer was unusually dry, hot and uncomfortable, but the young women worked several hours a day in the garden, and there was not a case of sickness, or even severe cold in consequence. They took charge of the green-house in winter, of all the potting of plants, slips, cuttings, &c., the regulation of heat, by night and day, without suffering at all from exposure, although the situation of the green-house obliged them to traverse a considerable distance in going to and from it.

We watched, with some anxiety, even those who were considered perfectly healthy, lest the unusual labor and exposure might have bad results, but after careful inquiry from both directors and pupils, I can safely affirm that there was not an instance of any sickness attributable to their occupation. A few who came as invalids were not miraculously cured, but they all felt much better for the work. The relief from wearing sedentary employment, the life in the fresh air, and the absorbing interest of the occupation proved potent cordials to them. Every one interested in the school felt thoroughly satisfied of its beneficial results in this respect.

Still, we would not be understood as recommending gardening as a universal panacea, which will cure all the ills of life, though used without care or wisdom. It is possible for men or women to get rheumatism by kneeling on the damp ground in the spring, to attend their hot-beds. And yet a physician assures me that she finds that even her invalid patients do not take cold from it as she expected. It is strength to bear exposure, not freedom from exposure, which insures health.

One may experience evil results from too long remaining in the warm, damp air of ill-ventilated green-houses. But gardeners of long experience tell me they have suffered no evil from their work.

The same conditions of free circulation and purity of air, which are essential to human health, are important to the life and growth of plants.

The careful drainage which farmers prize so highly, improves the health of the neighborhood, and though it is certainly possible for farmers and gardeners to get sick, there is no excuse for it in their occupation if rightly managed. Like every business it has its advantages and trials. We must use prudence and intelligence in overcoming its difficulties.

Our experience was too short to be of much value, in regard to the economic results of woman's gardening, although the sales from the green-house and garden were quite equal to our expectations.

One of the pupils has opened a green-house in Brookline, under favorable auspices, and will test for herself the possibility of her success in business. She has already a fair prospect, although she had but little capital to start with, and is now able to meet applications for plants and bouquets.

It certainly shows the wisdom of Harvard College in opening the school to women, that the only attendants on the lectures at first were young women who passed into it from our Horticultural School, who are pursuing their studies there with great interest. Even now women are in a decided majority there. I trust that this will not long be the case, however, as I believe that men and women would study and work together with as great mutual advantage there, as Adam and Eve did in the first Garden of Eden.

I hope that the young women of our community will not be insensible to the advantages offered to them by this richly endowed institution.

I have no doubt that its officers and professors are sincere and hearty in their intention to give them every opportunity for useful study and practice. The ignorant farmer or gardener no longer stands an equal chance with his educated neighbor, and women, in entering on this profession, must make the most of every advantage open to them. The experiment of the Bussey Institution is yet too new to make it proper to criticise its methods or predict its success. Its efforts must be tentative, and its officers must learn from experience, what are the needs of those who are to enter on this work as a practical profession.

With such ample means, and the best intelligence of the community to guide them, it ought to become a source of the widest influence and the greatest good. It is especially valuable as combining high intellectual culture with manual labor.

For the same reason we welcome the example of Vassar College in organizing a floral department, and encouraging pupils in the intervals of intellectual study to work in their gardens.

We especially need to conquer the prejudice which connects the idea of manual labor, out doors, with a servile or imporerished condition. Women, too, must learn to respect the idea of working for money. Labor gains in dignity, instead of losing, when it is done for the benefit of others, and not for our own enjoyment. And money is a very simple and convenient test of the value of our work. To work well, and sell the products of your work, is the surest way of benefiting the community. She who, by the improved culture of strawberries, shall put down their price ten cents a box, will place them within the reach of many a poor, feverish sufferer, to whom she cannot directly minister; and by the intelligent care of her green-house, she may help to produce flowers in such abundance, that it will be no longer the exclusive privilege of the rich to place the winter rose in the cold hand of the departed friend.

Many women have been very successful at the West in cultivating farms and gardens, and also in Vineland, New Jersey, where they share in the management of the gardens.

But we cannot rely mainly upon colleges or schools to make this occupation general among women. Only a small number of those who need out-door occupation will ever be able to attend them, yet if they do their work well their good influence will be widely felt.

It is not Harvard College alone which has educated New England; not Amherst to which we owe the rapid improvement in agriculture, during the last few years. So we cannot expect

that the Bussey Institution will do all that is needed to induce women to give their minds to this work. We want a wide-spread interest in the subject. I rejoice in the welcome which this Board gives to women at their sittings, and I trust that those who have a practical acquaintance with the subject will take active part in its discussions. It is not at all unusual for women to take prizes at horticultural shows. I hope in future, at agricultural fairs, they will display squashes and turnips, melons and pears, of their own raising, instead of patch-work bed-quilts, worsted work of strange device, and paintings which savor strongly of boarding-school teaching.

Women need to grapple with realities and take hold of the real work of the world earnestly, not merely to employ odd moments in useless prettinesses.

I am told, by those who have lately been in England, that it is delightful to see the rapidly-growing love of horticulture there among all classes. The magnificent floral exhibitions in London are attended by all the wealth, fashion and beauty of the great metropolis, and ladies of the highest rank discuss. learnedly, the merits of a new seedling, or favorite variety, as they do the charms of an opera singer. This results very much from the love of country life so common among the English aristocracy. But the taste is spreading very fast through all ranks. Rows of houses built to let are provided with hanging green-houses. In that milder climate, the simple protection of glass is all that is needed for many choice species of plants, and every house is proud of the display made in its windows. With us it has been found that no money brings in a greater return of health and pleasure to the family, than that spent in the little green-house opening out of the sitting-room or parlor. It should not be an exclusive luxury for the rich; it may be brought within very moderate means.

I remember one family of women who, having little property but the house in which they lived, have supported themselves for years by the needle—one pet sister excepted, whose artistic talent has been widely fostered to be the joy and pride of all. As they sat sewing in their pleasant room, always full of house-plants reared by their own care, and talked to you of the choicest works of art and literature, even the poor labor of sewing seemed to lose its primeval curse, and they seemed free

and happy in it. A small sum of money having been given them to use for their pleasure, they unanimously agreed to devote it to a green-house, in which they could more perfectly raise the flowers which they love so much. Now they have their little winter garden, always fragrant with beauty, giving them refreshment after toil, and cheer and comfort in every hour of sadness.

It has always seemed to me that flowers were the most perfect expression of the Divine Love. They are useful, it is true, but the practical does not obtrude itself; they seem to bloom for the sake of expressing the love and joy that call them into being. There is no joy so sacred, no sorrow so profound and sensitive, no human love so tender and so true, that it may not find expression in these beautiful symbols. They do not intrude; they are never out of place. The peasant may bring the spring daisy to a queen, and feel that it is a fit offering; the lover brings a rose to his chosen maiden and needs no other words; we place the lily on the altar and it requires no consecrating touch. I have seen poor little children pick up the withered bouquets which had been thrown out on the ash barrels of wealthy houses, and have felt how universal is this love of the beautiful, and what a good work he is doing who helps to put flowers within the reach of all.

So, too, our poet philosopher has well said, "If a man should send to me to come a hundred miles to visit him, and should set before me a basket of fine summer fruit, I should think there was some proportion between the labor and the reward."

Other considerations might be named, incidentally showing the advantages of out-door life and occupation for women. It certainly would tend towards a reform in dress. Imagine a fashionably dressed woman, with trailing skirt, flounces and bows, with streaming ribbons, and dangling laces, engaged in pruning her bushes and rearing her vines; the feathers of her hat catching among the branches, the trains of her skirts knocking down flower-pots in her green-house; her garments bearing witness of nature's great provision for carrying seeds to a distance.

Does it not show that devotion to a useful and simple work will inevitably tend to produce a simple and convenient style of dress? Whether it should be the short petticoat and broad has

of the Swiss woman, or the English beaver hat, coat and waist-coat of the equestrienne, or the much derided Bloomer costume, is uncertain, but it is absolutely requisite that the gardener should have shoes which will not melt like salt with the least drop of rain or dew, skirts which are not ruined by contact with mother earth, and will not tear with the first touch of a bramble, waists which are loose enough to allow free use of the arms, an arrangement of the hair which will bear both wind and moisture, and a hat which will stay on the head under all disadvantages.

Since we admire the Greek Diana, "the chaste huntress with the silver bow," we can certainly imagine a costume which will admit of all this and yet be both classical and becoming.

I once received a visit from two ladies from the country. As I had lately had a bride for a visitor with trunks which, like the Vicar of Wakefield's family picture, could not be got upstairs or into any room in the house, I was as much pleased as the hackman, with the very modest size of their trunk. I said, "Is this all the baggage you have brought?" "Oh! yes." they replied. The next morning one of the ladies brought me down a fine large Hubbard squash of her own raising, which had also come in the trunk! It filled up the measure of my amazement, and set me to thinking whether, when ladies prided themselves on taking choice specimens of squashes and pumpkins to the city, they would not economize in the size of their hoops and the number of their flounces. A gourmand who was very fond of pork, had tried every means of giving it additional flavor and relish. He had eaten it broiled, and boiled, roasted and fried, in brawn and in sausages, and every other imaginable way. At last he said, "I wish I had been born a Jew, for that sense of a forbidden luxury is the only thing which I can imagine would impart a new relish to pork."

Now as the season of Thanksgiving approaches, all the arts of the housewife are exhausted to give new zest and flavor to the "Thanksgiving dinner." Would it not, O devoted husband and father, add a charm to this long cherished festival, to know that the pumpkins and squashes were of your wife's raising, or that the ruddy glow on the apple reflected the blooming cheek of your daughter, made healthy by the summer spent in the orchard or garden? Would it not indeed make a new day of thanksgiving and praise for us all, if the hours now given by

women to idle and frivolous pursuits, could thus be employed in adding new comfort and beauty to life, "so that the wilderness and solitary place should be glad for them, and the desert should rejoice and blossom as the rose"?

Maj. Phinney. I move that the thanks of the meeting be tendered Mrs. Cheney for the beautiful and highly instructive lecture to which we have listened.

The CHAIRMAN. It has often been thrown in the teeth of our lady friends that the first woman sinned herself and the race out of the Garden of Eden; but her representatives, like Lady Macbeth, who, after inciting her husband to the murder of the king, repented, and sought to keep him from the commission of further crimes, have ever since been trying to get us back; and they have now inaugurated a system by which they hope to lead us back to that garden, and assist to cultivate it. Mrs. Cheney is connected with the first institution for that purpose ever established, and I hope that the State Board of Agriculture and all farmers will help on this good work, whose results will be the advancement, not only of woman, but of men,—husbands, fathers, brothers and sons. I take great pleasure, therefore, in putting the resolution.

The resolution was adopted unanimously.

Rev. E. Porter Dyer, of Shrewsbury, then read an amusing poem, which was frequently interrupted by laughter and applause.

The Board then adjourned to Thursday morning, at half-past nine o'clock.

## THIRD DAY.

THURSDAY, December 23.

The session opened at half-past nine o'clock, and Maj. Phinney, of Barnstable, was called to the chair.

The Chairman stated that the first subject for discussion was

## CATTLE HUSBANDRY,

which was opened by a paper by the Secretary of the Board, on "The Principles of Breeding," of which the following is an abstract:—

The natural laws which apply to the increase of the stock upon the farm are comprehended under the general term of the principles of breeding. Every farmer has observed marked peculiarities in his animals. Some of them fatten readily, for example, and pay by their rapid increase of weight for all the food they consume, while others do not. Some cows in the dairy pay richly by their abundant yield, or by the high quality of their product for the cost of keeping with the addition of an abundant profit, while others fall below this point and actually entail a loss upon the owner. There is a want of uniformity, a great difference in the intrinsic value, and the object of the intelligent breeder is to search out the rules which govern the results he seeks to obtain, and to ascertain what system he can adopt to make sure of attaining such results. Experience has shown that the same fixed or natural laws apply uniformly to all classes of stock, as horses, cattle, sheep, swine, &c., but there is always more or less difficulty in their application in practice, from the imperfect knowledge we have of the peculiarities of individual animals.

The old maxim that "like produces like," is liable to be misapplied, and the error will appear in certain contradictory results which we find from time to time in the course of our experience. This arises in part from the fact that certain qualities are latent or hidden and do not appear to the eye. In order to breed with certainty, it is essential that the qualities we desire to obtain should be inherent in both parents. If the two animals possess opposing or unlike qualities the characteristics of the offspring will follow the one which possesses the strongest hereditary power, or the strongest power of transmitting its peculiarities, the greatest unity of influence and fixity of type.

If both parents possess a like character and fixity of type the result will be a character similar to that of the parents, but in a more distinctly marked degree. Two animals possessing this strong similarity of characteristics will not only perpetuate their corresponding peculiarities, but intensify them in their offspring, and each successive generation which they produce receives an increase of hereditary force or power of transmitting its own peculiarities. But this power invariably diminishes if the parents instead of possessing this likeness of character really possess opposite or antagonistic characteristics. We cannot

judge wholly from the form and apparent qualities of the animal, because many of the most valuable characteristics of a breeding animal are latent and hidden. We are compelled to fall back upon what we know of the history of the individual animal, or the length of time it has been bred with care, to judge of its capability of transmitting its peculiar qualities, relying upon the knowledge we have of the general principles of breeding, that the qualities sought are inherent and well fixed in the system.

In breeding, therefore, the first important rule is to breed only from the best, but not merely the best looking, or the animal that fills the eye the most completely, but from one that has the capacity of transmitting his good qualities in the highest degree, and the strongest evidence of this is the knowledge we have of the qualities of his ancestors for several generations, unless we have some of his stock to tell as plain a story to the practised eye of a judge of cattle.

The quality of what is called a pedigree is more important than its length. It is of little use or satisfaction to trace a pedigree back through inferior or ill-bred stock, except as a warning against the animal, but the longer it is the better, provided it shows a high character in the ancestry, because the hereditary power is cumulative, and becomes stronger and more intense and fixed from generation to generation where the respective parents possess similarity of characteristics, as is commonly the case in our well established breeds. In breeding dairy stock it is of special importance to study and to know the quality of the stock from which the male has descended.

The milking qualities of the cow are not confined to any particular race or class of stock, but exist to a greater or less extent in all the well established breeds, and in cows of no known breed, like the common stock of the country, but some classes or families have been raised with greater attention to this point than others, so that high dairy qualities have become the rule in some breeds while they are the exception in others. In other words, though the secretion of milk is natural and common to all animals that suckle their young, the extraordinary development of this secretion is artificial,—the result of care and breeding. The quantity of milk which a cow is capable of secreting depends much upon the supply of blood which

passes into the mammary glands, but especially upon the activity of those glands, but the quality is governed more by the internal structure of the animal.

In subjecting the animal naturally wild, to a state of domestication so as to modify its form and system, we do it at the expense of certain qualities for the sake of attaining other qualities better calculated to promote our immediate interests. The vitality or vigor of constitution is weakened as well as the reproductive power, but the formation of fat or the tendency to produce meat, and the profitable yield of milk may be largely increased. Now as these qualities, the extraordinary development of which is due to domestication, are artificial, there is a constant tendency to revert to the natural condition, so that constant care is required to preserve what we have gained, by careful selection of individual animals from which to breed, especially to see that the male comes from a stock or family remarkable for the production of milk.

It has been found that animals that possess a strong tendency to secrete fat in the system seldom unite with it a strong tendency to secrete milk. Indeed the reverse is commonly true, and there is a marked deficiency in the formation of milk. When food is taken into the system, the first process is that of digestion, then follows the separation or preparation of nutritive parts for entering into the circulation of the blood. Individual animals differ greatly in the completeness with which this process is effected. In some there is a much greater loss of food than in others, and the completeness and economy with which this separation of the fatty elements of the food is effected varies according to the internal structure and organism of the animal itself. Perhaps it is owing in part to the fact that one animal masticates, and grinds up, and digests its food more perfectly than another.

Milk is secreted from the blood. If the blood is thin and poor and but slightly charged with the rich elements taken up in the food, the milk is of necessity poor and watery, and the quality will usually bear an intimate relation to the quantity produced. If the organization of two animals is such that they separate or eliminate the fatty elements of the food and store it away in the blood equally well, they accomplish the first step in the process of conversion of food with equal economy, and, so far as this goes, it is the same whether the subsequent use to be

made of it be to form the fat or butter in milk or the fat and tallow of the body. In other words, the economical preparation of the raw material of the food, that is digestion, and separation of the elements of nutrition, is equally important for the fat in the blood, whatever may be the ultimate form into which the animal system is to convert it. But the internal structure which accomplishes this process differs widely in different individuals. One animal will effect this elimination completely, with the least possible loss or waste of food, while another will fail to extract the fatty or nutritive elements of the food and allow them to pass off unused. It follows that animals whose structure is best formed for fattening are also best formed to fulfil the first conditions essential for the production of rich milk.

There are organs for the deposition of fat as well as for the secretion of milk. The former are called the adipose tissue, the latter the mammary glands. The object in breeding stock for the dairy is to stimulate the mammary glands to the greatest possible activity; that is, to increase their energy as compared with the other organs of secretion, and to prolong their period of activity; and they are, to such an extent, subject to hereditary influence, that great progress has already been made in increasing their power to perform their natural functions, as we see in the establishment of breeds remarkable for the production of milk, while a neglect of this point has, in some instances, so reduced the energy and activity of these glands that whole classes of animals have ceased to yield milk in quantities to be profitable upon the dairy farm.

With respect to those breeds where the tendency to produce meat has been developed, and the milking qualities overlooked or sacrificed to early maturity, no doubt we could by judicious management bring back the condition of the mammary system to a high standard of efficiency, but we should be likely, in doing it, to reduce the tendency to the economical supply of meat, or, in other words, we should impair the value of certain very important qualities which have been highly developed for specific purposes, and get only what we find already highly developed in other breeds, for, whether the two qualities are irreconcilable or incompatible in the same animal or not, they have not, as yet, been combined with any great degree of success. It is better policy, on the whole, to aim to breed for specific purposes

and to develop the highest capacity for such purposes in separate breeds.

The remaining portions of the paper were devoted to the consideration of the application of general principles to the practical details of breeding stock for the dairy, but as they elicited little discussion upon the points to which they refer, it is not thought important to present them in this connection.

Mr. Johnson. I would like to ask the speaker whether he prefers to have a heifer come in while in the barn, or while upon grass?

Mr. FLINT. As a matter of practice, I should prefer she should calve a little while before going out to grass. If she goes out to grass a week or a fortnight before calving, it will stimulate the mammary glands to such an extent that they often become painful to the animal, and in many cases she has to be milked before calving. It is desirable to avoid that, if possible. If she comes in two weeks before going out to grass, at the end of that time her udder will have come into its normal condition, and then there is no harm in stimulating it to its utmost capacity. But with young cows, a difficulty with the udder should be avoided, and I think it would be avoided by having them come in a little before they go out to grass.

Mr. Johnson. That is my own opinion.

The CHAIRMAN. Mr. Flint has opened a field for discussion which will prove interesting to the Board, and to the citizens present, and I hope it will be continued by gentlemen here who thoroughly understand the subject of cattle husbandry.

Mr. BUFFINTON. Mr. Flint spoke of milking cows before they calved, in which I have had considerable experience, and I am really undecided whether the practice is a good one or not. I would like to hear the opinion of those who have tried it. We have had more cows troubled with milk fever this last year than ever before, and we have rather laid it to milking them before they calved.

Mr. FLINT. Where a cow is turned out to grass before she calves, it sometimes becomes a matter of necessity; it would be a positive and permanent injury to the cow in some cases if she were not milked, but it is to be avoided, if it can be. I think it rather an injury to the calf, and I would rather avoid it if possible. In

doing it you see it deranges the ordinary course of nature at that time. Nature has provided a peculiar quality of milk, especially adapted to the wants of the young calf. It contains peculiar chemical properties, which are absolutely indispensable for the calf at that time. Now, if you begin to milk the cow before she calves, that order of nature is interrupted, of course; that peculiar character of the milk is to some extent modified. I think it is desirable, as I said before, to avoid it when it can be, but rather than see a cow suffer, or see her udder injured, perhaps permanently, I should certainly milk her. I should like to hear Mr. Ellsworth's experience on that point. He is a very large dairy farmer and breeder, and perhaps has more cows in milk through the year than any man here, and he must have had many cases where he has been obliged to practise one way or the other.

Mr. Ellsworth, of Barre. The question put by the gentleman on my right (Mr. Buffinton) was, I think, whether or not a cow should be milked before calving. Under some circumstances we are obliged to do so, but, as Mr. Flint has very properly said, it should be avoided if possible. When I have such a case come up, I immediately put the cow on a low diet. Even if it is the season of a great flow of milk, I put her in the stall half of the day; I will keep back that way if possible, and by doing so I have very many times avoided this milk fever that the gentleman speaks of. In certain cases, however, it will come up, and in such cases I put her on a low diet. I feed no com the first ten days after calving, if the cow is in fair condition; if she is rather old, I give her oats, which are somewhat stimulating, and will increase the milk. But if she gets into a bad state, which many of our large milkers do, we are very careful not to let the calf stay upon the udder any length of time; for if you do let the calf work upon the udder when there is no milk there, as many people do, thinking (as is perfectly natural) to fetch the fever out, you will injure the quarter to which the calf sticks; he will hang to any teat he gets hold of, and that quarter will be somewhat emaciated, and it will not come back when you go to milking again. That is my experience.

There are many things about a cow, when she is coming in, if she is a good milker, that people generally do not understand. It is the most critical time to take care of a cow that I find. If

I am at home, I trust to no one to do it. She should have a dry place, any circulation of air should be avoided, for the organs are very delicate at that time; and when I manage my cows myself, I very seldom have any trouble; but when I have not been at home, I have found trouble.

Mr. Buffinton. Last spring, I had a case of a cow that it really seemed ought to be milked. I did not wish to do it, for I was afraid of the milk fever afterwards, which my experience had shown me was likely to follow. I gave her two doses of aconite, eight or ten drops to a dose. I happened to discover the effect of aconite in drying up the milk two years ago.

Mr. Ellsworth. A gentleman asks me what I do in case the udder becomes hard. I treat it very differently from the old-fashioned way. The old method used to be to apply Indian meal and cold water. I immediately apply warm soft-soap suds, with the hand, very gently, very carefully, and continue it for some time, and work over the udder until it is perfectly dry, which will be very soon if there is fever there. I repeat the application once in four hours, and I have never failed to take out the hardness.

QUESTION. Did you ever try saltpetre?

Mr. Ellsworth. I think I have; but I have done with everything except the treatment I have mentioned. I ruined some very nice cows in the early part of my management, but for the last few years I have been able to control it.

Mr. Loring Moody. I think there is no subject of deeper interest or greater importance to the agriculturist than this one upon which Mr. Flint has spoken to-day, and which is now under consideration,—that is, the method of obtaining the best types of animal life; I mean, of course, those animals which serve us. But while I would do everything in my power, if I were the owner of animals or a dealer in them, to increase their physical qualities, I would endeavor also to increase their mental and moral qualities. What we want in all sorts of animals is gentleness, docility, good temper, good disposition. We can get a great deal more, and I think a great deal better meat out of our beef animals, and our mutton animals, and our pork animals, by developing in them kind and docile tempers, than we can by keeping them at arms' length from ourselves and making

them ferocious; and so you will find that the law of kindness will have its influence upon breeding animals.

Mr. ELLSWORTH, of Barre. As Mr. Flint spoke about heifers coming in at two or three years old, I will say, that we cannot afford, I think, here in Massachusetts, at least, to wait for a heifer to come in at three years old; we want them to come in at two years and a few months old. I agree with Mr. Flint in regard to the time of coming in. The animal should calve before she goes to grass and fills up with milk producing food. After that we may stretch her milking capacity. I am convinced that we can teach a heifer to give milk; I have no doubt of it at all. I generally raise what I use, say half-a-dozen a year, and I invariably use the full-blood for my males, and sort out what I call the best qualities; so, with half-a-dozen a year, I hardly ever fail of drawing perhaps one prize, three good ones and one blank,—the blanks will come in once in a while.

But I merely rose for the purpose of saying that the time for a heifer to come in is two years old rather than at three, for it makes fifty dollars difference in the cost of the cow, and you will get a better cow by teaching her to give milk.

Mr. Converse, of Palmer. I would state, in reference to this milk fever, two cases that have come under my notice within about a year. In one case a man had just bought a cow, for which he paid a hundred and fifty dollars, and he came to me and said his cow was going to die. I went to see her, and found her all in a tremble. There were one or two physicians there who said she must die. I asked him if they had bled her, and he said they had not. I said that, in Germany, the old rule was to bleed a cow with milk fever, but they all now condemned it, but if the cow must die, there would be no harm in trying it. I took his fleam and bled the cow pretty thoroughly. One test was entirely bound up. I whittled a little pine stick down round and small, and bored out that teat. It was perfectly dry. I did it carefully, and washed the cow's bag pretty thoroughly, or, rather, his man did, with flaxseed oil. The next morning, I went to see the cow again, and bled her a second time. That cow got well, and gives milk to-day out of every teat, and is a good cow; I don't know but as good a cow as she ever was. That was the result of that experiment.

Another man in my neighborhood had a sick cow that was similarly situated. She had just calved, and could not get up. I bled her, and, finding that her bag was swollen quite badly, rubbed her bag with oil, and she got well. We only rubbed it once I think. I attributed the cure to the bleeding. Mr. Keith, who pretends to be a cow doctor, and goes all around for ten or twelve miles, says he has practised bleeding for the past year for every cow, and has not lost one.

Mr. Boise, of Blandford. I object to boring out the teat. I have had a good deal of experience in raising heifers and in taking care of cows, nearly the whole of my life, and I go 'round some taking care of cows when they calve, &c. I have a remedy for caked bag which I use, and use extensively. It is well known to a good many horsemen that, if they have a horse which has had the horse distemper, or has been foundered a little, they use an oil that is called skunk's oil. This oil, applied to a cow's bag, penetrates it, and takes out the fever almost immediately. But I spoiled two good cows by boring out the teats, and I don't want to spoil any more.

Mr. Converse, of Palmer. Mr. Keith went to visit a heifer this fall. She was a very nice heifer, but they could not get any milk from her, and they concluded she must be spoiled. He bored out all four of the teats. They thought there was no hole in the teats. Now she is a good heifer. You could not buy her for fifty dollars.

Mr. Boise. For the milk fever, I have used a poultice of mustard and vinegar, applied to the back. I believe the disease is something like the typhoid fever in the human system, and that either goes to the bowels, the spine, or the brain. I apply this poultice of mustard and vinegar to the spine, and right them in that way, without bleeding them at all.

Mr. Goodman. When such eminent doctors disagree, it is very difficult to decide in regard to the treatment of cows. I confess that I am rather a homoeopathist; I don't believe in the heroic treatment, except in very extreme cases. It may be necessary, occasionally, to have the Cæsarian operation performed upon a cow, but I think as a general thing, that necessity may be avoided, by proper treatment of the animals. That is where the difficulty comes in. If our women, and our

cows also, were treated in a proper manner, if they had proper diet and proper exercise, and the other attentions that they require, parturition would not be such a difficult matter; we should have fewer diseases of women, fewer diseases of cows, better calves, and better children.

Now, as to garget, it has got to be a very common complaint, and I am not entirely certain that it is not contagious. I am not entirely certain but that, like the epizoötic aphtha, or foot and mouth disease, it may run through a herd sometimes, and of course it would attack the cows, which are more naturally exposed to it. We very often find that it comes in a peculiar manner to our cows, sometimes running through the herd. few years ago I had a herd of good healthy cows, not subject at all to disease, but I was unfortunate enough to buy an animal that I knew nothing about, and I found that she was full of garget; her bag was as hard, almost, as a paving stone. I paid a pretty high price for the cow, but all the advantage I derived from her was what I got in the way of the exercise she gave my man in rubbing her bag for a year. that cow, the garget extended all through my stables. ied up the books pretty thoroughly, and I resorted to a cow doctor, and after hearing what he had to say, and what remedies he thought I wanted to use, I came to the conclusion I had better leave him alone Then I applied the rubbing system, which has been mentioned by my friend from Barre (Mr. Ellsworth), and I have never had any trouble, with proper attention, in reducing the inflammation. I know there are cases where it has been neglected, where medical remedies have to be applied. There are remedies in the books, which are complicated, and require a good deal of skill in administering them, but they must sometimes be resorted to. As a general thing. however, I think we shall do better by rubbing them with warm water and milk; I use that a good deal; but after all, it is the hand working that does the business. There is a doctor in New York who has effected some wonderful cures in this way. It is a pretty well established fact, that he has restored the eyesight and hearing of people by hand rubbing. There is no doubt that the great virtue of this method is the constant irritation of the skin, and in the exercise that the muscles get in this way, bringing them round into a sound condition.

There is another point in connection with this matter to which I will refer for a moment. I think that animals, as well as men, are fed too often. That is, we eat too many times a day. There are exceptional cases; you cannot lay down a universal rule. A man who gets up at four o'clock in the morning and goes to work, of course needs three meals, because he has a long day; but take an ordinary Christian, who gets up in the morning at a decent hour, does his work faithfully, and goes to bed at the proper time, he will get along very comfortably with two meals a day; if he does not work any harder than a great many of the farmers in this State, he will do very well with two meals a day. The man who gets his breakfast at eight o'clock, and has a good digestion, if he will take his second meal at two or three o'clock, and not eat anything after that, and go to bed at a reasonable hour, will be a better man, will have a better temper, and his family will be happier, than if he eats three meals a day. It is the third meal that does the business, but we cannot get along without it, we think, in Yankee land.

In the old country, where they live upon solid food, and do not poison themselves with coffee and pastry, and rarely taste of sweet things, they have sweet tempers. But you know, that if you go among country people, they are so hospitable that they will give you for supper hot biscuit, half a dozen kinds of cake, a great many kinds of sweetmeats, some tongue, a little cold pork, and very strong tea and coffee. No man can go to bed on a supper like that, and wake up the next morning feeling comfortable and at peace with himself and all the rest of man-That is the sort of philosophy we ought to practise towards our animals. Up in Worcester County, where they are devoted to three meals a day, there are a great many farmers who feed their animals four or five times a day; but I found in some of the dairy sections of New York, where they have as good farmers as there are in Worcester County or anywhere else, they were in the habit of feeding their cows but twice a day. It looked to me at the time as rather preposterous, but I tried it all last winter upon my horses, and for two winters past I have tried it upon my cows, and I have not seen but that they got along just as comfortably, and they have eaten up their hay and meal cleaner, and have not eaten quite as much as when I fed them three meals a day.

My case is a little exceptional. My animals are breeding animals. I do not expect to get very much profit in the way of milk or butter. If I were running my cows for milk or butter, as a great many farmers do, and wanted to produce a large quantity of milk, I should perhaps feed them oftener and give them more; but, taking cows as they are ordinarily kept, we get through with them about November or December, and then the only point is to take care of them until they come in in the spring, and I think they would do just as well if they had but two meals a day,—giving them regularly what they want, and letting them lie quiet the rest of the time. Then, if-we are careful about keeping them clean, and feeding them regularly, not over-feeding, I do not believe we shall have any trouble from garget.

I apprehend that whatever may be said of the influence of this Board, in other directions,—and it has been very extensive in many ways,-it will be admitted that its efforts for the improvement of the bovine species have been eminently successful. If there is one thing that can be pointed to as having vindicated the wisdom of those men who are called scientific farmers, it is the increased care which, during the last fifteen years, has been bestowed on the stock of the State. Any man who has paid any attention to that subject, who will look back during that period, will recollect that there were but very few parts of the State where he could find thoroughbred animals. Our ancestors may have had as good stock as was ever put upon any country,—our native stock, a conglomeration of all the breeds of Europe. Yet by want of proper care and proper feeding and attention, and, above all, by the use of what were called scrub bulls, we had so reduced the quality of our stock, that it had become decidedly inferior. But some gentlemen took hold of that matter, and imported thoroughbred male animals, and from that time to this, our stock has been steadily improving in quality; and although it is said statistics show that the number of animals is not so large as it was some years ago, yet that reduction in quantity is made up by the improvement in quality; we have such far superior animals that we do not want so many of them. Farmers in my region, who formerly found it necessary to keep a dozen or fifteen animals for the production of the milk and butter they wanted, now get along with seven or

eight, which, through their superior quality, and through the better attention that is paid to them, will produce as much as a dozen formerly did. And this State Board have gone so far, in obedience to the wishes, I am happy to say, of a majority of the farmers of this Commonwealth, as to pass a resolution last year, that hereafter no society sending a delegate shall give a premium to a bull that is not pure bred. Some farmers complain of this; but they are not prevented from raising a scrub bull and using it for beef, if they please. All that is said is, that those animals shall not be brought up and receive premiums equal to a thoroughbred, and for this reason: because every one knows that according to the laws of breeding, which have been laid down by Mr. Flint, and other gentlemen who have investigated this subject, a thoroughbred animal will produce a good progeny, while the stock of one which is not a thoroughbred, although you might get at first a good-looking animal, will run out, if you continue to use him. Therefore, I think it is the unanimous wish of all the farmers of this Commonwealth, who understand this subject, that we shall only give prizes to thoroughbred bulls.

Now, farmers are disposed, sometimes, to doubt on this point, and they say it is no object to look back to the pedigree of an animal, but they do not doubt when they look at the human family. Does not every man expect to find the likeness of father or mother in the child? Why, a man would have doubts about the paternity of his child if he did not see in him some likeness to himself. Do you find any old family in the world that has not stamped its features, in some shape, upon its descendants? Take the case of Henry the Eighth of England—a man of the strongest and most vigorous powers—a man who first married a woman like himself in character, Catherine of Arragon, whom he afterwards divorced. result of that union-because "like produces like"-was the woman called "Bloody Mary." She inherited the strong qualities of her father, and she inherited the pertinacity of her mother. The result was, that notwithstanding all the adversities through which she passed, and all the humiliations to which she was subjected, she came out, when she was queen, just the same character that was to be expected from her parentage. After his divorce, the king married Anne Boleyn, and the fruit of that union was Queen Elizabeth, who exhibited the characters of both parents—the strong father, the weak mother. She was, in some points, one of the strongest persons that ever sat upon a throne; there came out, whenever occasion required it, the great character of the father, and she was equal to every emergency. But until that emergency arose, she had the weakness of her mother, and allowed herself to be toadied and flattered, and showed herself, what she really was in those moments, a weak woman. So you may take any of the reigning families of Europe, and you will see among them all the peculiarities of their ancestors, so marked that they could not fail to be distinguished by anybody who investigated the subject.

Now, we cannot ignore these same laws in relation to our We cannot say that the best pure-blood bull does not perpetuate in his descendants his characteristics, either for good or evil. It is impossible for an animal that has not good qualities to give to its descendants characteristics which it has not. Therefore, as Mr. Flint has shown us, it is important that we should have, in a bull particularly, strongly-marked characteristics, because he gives to his progeny, through successive generations, his character, while the female only gives it to her immediate descendants. But I think Mr. Flint will agree with me, and all breeders, that it is better to have the very best cow you can get, and the best bull to match the cow, if you want the best stock. The only way, therefore, to bring up our stock, is as the best farmers are bringing them up. If we do not have thoroughbred stock on both sides, as is not necessary in the ordinary business of a farmer, we must make a selection of our best cows, and put them to the best thoroughbred bull we can find, and follow that up with the progeny. It is not a certain thing, because you have a first-rate cow, apparently, and a thoroughbred bull, that you will get a first-rate calf, because there are so many chances that a bad trait or a chance peculiarity will come out in the progeny, just as some peculiarity will appear in the children of a family for three or four generations. But if you continue this system, getting rid of your bad animals, if you have them, and taking the best to

breed from to keep up your stock, you will in time have the animals you ought to have.

The great trouble is, we do not give these matters the consideration and study we should. We come here and listen to these lectures and discussions, we get pretty full of them, we enjoy them, and then we go home, and when the reports come, we do not study them as we ought to do. Take that lecture of Dr. Nichols, or the one to which we have just listened by Mr. Flint,—it was pleasant to hear them, and we think we know all about them; but every sentence is just as full of meat as a chestnut is of its kernel, and a man needs to take these reports and study them out for himself, and think them out. That is the only way in which he can get all the benefit of these meetings. What we hear here comes in one ear and goes out at the other, except some few things that appertain to our particular calling; but these reports contain a mine of information and learning, and if, when we get them, instead of putting them on the shelves, to see how nice and clean the books look, we will take them up and read them, we shall be the wiser for it, and the men who come here in after years will be able to go . forward to new fields of study and investigation.

Mr. Wetherell, of Boston, referred to the fact that the average yield of cheese per cow in this Commonwealth appeared, from the reports of the cheese factories, to be not more than 350 pounds, while in Herkimer County, N. Y., he had been assured by a dairyman of long experience, that he had cows that would produce 800 pounds of cheese. He thought the amount of milk per cow would not average over 500 gallons, and the amount of butter not more than 150 pounds. He argued from these facts the importance of paying more attention to the raising of good cows.

Mr. Ellsworth, of Barre, said that the cheese factories in his section of the State did not run more than five months in a year, and some of them only three. Their cows produced a large amount of milk after the factories stopped. Some of the farmers made butter, some sent their milk to the condensing factory, and others sent it to Boston, so that the reports of the cheese factories afforded no data whatever by which to arrive at the production of milk in that county.

The CHAIRMAN. This subject of breeding is one of the very highest importance. You remember that a great deal of excitement was created, a few years ago, when Mr. Campbell, of Vermont, went to the World's Fair with his sheep and took the first premium. It appeared, on subsequent inquiry, that it was but the imported blood of ten years previous that had gone back to Europe in competition with the French Merinos, the first in the world. It was the result of that careful breeding and feeding which have been referred to here.

Mr. HUBBARD, of Brimfield. With regard to the improvement of stock, I think there is no person who has travelled over the State and visited the various agricultural societies, who will not say at once that the stock in Massachusetts has been improved over what it was in former years. Now the question comes, "In what manner has it been improved?" We all say, "By the introduction of thoroughbred stock."

One word with regard to the milk and cheese produced in Massachusetts. I have about as much to do as any one with making up the reports to which reference has been made, and if we take the statements of those reports, we do not get a fair statement of the products of the cows of this State. There are some dairies which carry milk to the factory only during the excessively hot weather of July and August, and sometimes only from the middle of July until the first of September; but those cows are included in the number of cows on which the calculation is made, bringing the average per cow down lower than it would otherwise be. Then most people feed their calves, which are worth from five to twenty-five dollars, which is a large item to be added to the income of a cow.

Now, none of the factories very near me have run, for the last two years, more than three or four months a year. The dairies, in that section, previous to the factories' starting, are making butter and selling milk. The factory with which I am connected, started about the first of April this year. Previous to the first of April, the calves from the cows of the dairies were feeding, and the milk before that time was used in the manufacture of butter. The factory (and mine is only a sample of others) closed its operations in making cheese in October, and from that time forth, the milk in that section was carried to the condensing factory in West Brookfield. There is a large item of

income that comes from the dairies after they are through with making cheese. Then, again, there is a milk car that runs through to Boston, on the Boston and Albany road, and, for several months after we get through making cheese, a good deal of milk is sent to the Boston market. Now to get at the real profit of our cows, we must take the entire income, not merely what we receive in a short time.

Adjourned to half-past one o'clock.

## AFTERNOON SESSION.

On the reassembling of the Convention, the Chair stated that the subject for discussion was

## FRUIT CULTURE,

which was opened by J. F. C. HYDE, of Newton. He said:-

The subject presented for discussion at this time is old and familiar and yet always an interesting one. It may be asked, what we have to offer that is new. Possibly not much, but we believe that good always comes from the free discussion of 'most any subject. What we have to say on this occasion will have particular reference to fruit-growing in our own State. The time was when some fruits were grown more easily than they now are. Our climate seems to have changed in some respects, rendering successful fruit-growing more difficult, while we have many more insect enemies to contend with, so that the chances of success are not so good as formerly. Apples could once be grown with as much ease and certainty as potatoes or Indian corn, while the crop is now considered somewhat uncertain, and by many as unprofitable.

No fruit grown in our climate enters so largely into our cookery, or is more highly esteemed for all purposes than this, and we feel that we cannot possibly do without it, but we shall certainly be obliged to do so if we depend solely on the crop produced within our own limits. Is the limited supply due wholly to the seasons, or is it true proper attention has not been given to the selection of varieties that would bear the odd years when the Baldwin does not, or to the neglect to plant appletrees, and to take care of those already planted, or all these causes combined?

All through this State the Baldwin apple has been planted to the exclusion of better and annually producing sorts. During a bearing year, which is the even year, there are as many apples, and perhaps more than are wanted to supply the market, and the prices are consequently low,—too low the grower will say, and barrels to put them in too high in price,—so by the time the fruit is sold and all expenses paid, little real profit remains.

At just what price good apples grown in Massachusetts, properly picked and packed can be put down in our large cities so as to pay a fair profit to the grower we cannot exactly tell, but think it should not be placed below two and a half dollars, and possibly three dollars would not be considered too high a figure. They average the latter price, if not more, taking ten years together, for good apples never sell below one dollar and a half, and some seasons sell for four and a half to six dollars per barrel. We are told by some that apples cannot be raised at all here, but this we think is a mistake, for we have never known a season when some varieties did not give a fair crop in some localities.

Others say they certainly cannot be raised where land is worth several hundred dollars per acre, and to this we are agreed, and we would not advise the planting of apple-trees on valuable land near cities and large towns, when the same can be profitably employed for market gardening.

New York, Michigan and other States west of us yearly take from our pockets large sums of money that might just as well remain at home.

There are tens of thousands of acres of land eminently adapted to profitable apple culture that now are used as pasture or woodland. Who will say the hills of old Berkshire will not yield just as good apples as can be raised across the line that divides us from New York? Who will deny that there are many acres of land that are not worth more than ten, twenty or possibly fifty dollars per acre for any other purpose that could be profitably employed in raising apples? We fully believe if the farmers of our State would take good care in the selection of a site and of trees of good varieties for their orchards, and then take as good care of them after they are set as they do of other crops, there would be no complaint that the apple crop had ceased to be a profitable one. With the

constantly improving facilities for getting the fruit to market, even from the more distant parts of the State, let the farmer take courage and plant apple-trees even though he may not live to gather the harvests. Such orchards judiciously planted, and in such locations as we have suggested well cared for, we believe will prove a profitable investment in spite of all the obstacles that lie in the way. We have enemies to contend with, plant what crop we will.

We cannot be sure of perfect success in any department. We wish to remark, as we leave this branch of the subject, that more care should be exercised in the selection of varieties, so that the crop will be more uniform, and thus if possible avoid extreme prices. As we remember the many acres of land from which the wood has been stripped and that are now comparatively unproductive, let us hope these may be covered with flourishing orchards of apple-trees, whose boughs shall bend beneath their load of red and golden fruit.

## PEAR CULTURE.

On the subject of pear culture we have little to offer. A great many trees have been planted during the past twenty years that are now coming into bearing, and the markets are likely to be well supplied with this excellent fruit. After long experience and careful observation we are led to believe that a pear orchard planted on suitable land and well cared for will prove a fair investment. The money will pay for a term of years—say thirty to fifty, the life-time of the trees—seven to ten per centum.

Once we thought pear culture even more profitable. Only the very best fruit brings a high price, and the very poor is wholly lost, as poor pears are not salable. We would not discourage the planting of pear-trees. Let every owner of a garden plant for his own use, if no more. If one has a soil or location or both peculiarly adapted to this fruit and can afford to wait, then plant pear-trees.

In planting orchards we do not advise the setting of many varieties; six to ten is all any person should set who intends to grow them for profit, and leave the planting of hundreds of varieties to pomologists, who wish to try all that are originated.

Several things are to be considered in the selection of varieties. One may raise those for home use that he would not grow for the market. Size, color, productiveness, quality, vigor and health of tree, are among the points to be considered in the making up of a list.

The pear-tree needs and must have higher culture and more care than the apple-tree, and especially those grown on quince stocks, the latter a class of trees we do not highly esteem. As this fruit is not used very much for cooking it is not so universally esteemed as the apple. We believe that our people make a mistake in not cooking the pear more generally, and so make use of even those specimens that will not bring the highest price in the market.

The pear-tree seems to have fewer insect enemies than the apple, though we cannot tell what time may develop. We still think pear culture should be encouraged.

We leave this subject, and briefly refer to that most luscious fruit, the peach. The peach in our boyhood days seldom failed, but within a few years has proved very uncertain. The trees under the management they have received have proved to be very short lived. This difficulty can be overcome in a great degree by the selection of pits from the best and most hardy varieties, and by growing the trees slowly and thus securing well ripened wood and greater duration.

The peach deserves more attention than it is now receiving in our State.

The cherry has not been regarded as a profitable fruit for several years, though when it is obtained it brings good prices. We cannot advise the planting of large orchards of this fruit.

The plum, never so healthful a fruit as some others, has ceased to be profitable, owing to warts and curculios, and very little attention is now bestowed upon it.

We pass to a brief consideration of the small fruits. Until within a year or two we have always advocated the extensive planting of the currant, both for home use and the market. The fruit is always agreeable, and finds a ready sale at fair prices. A formidable insect enemy has appeared, however, which will greatly discourage the growers of this healthful fruit. It was hoped that before this some effectual preventive of the ravages of the currant worm would be discovered. Powdered

hellebore, carbonate of lime, air-slacked lime and other substances have been used with considerable success, but still the detested worm continues its ravages to a great extent. We still hope and believe that this insect, like the equally detested cankerworm, will disappear soon and forever, and would advise the planting of currants. The only way we see is to keep on planting and fighting all enemies to the best of our ability.

Gooseberries have not been largely grown in our State, for the demand has never been very large. Our people seldom eat ripe gooseberries and the sale of green fruit is rather limited. We cannot advise the extensive planting of this fruit for profit.

The raspberry is an excellent fruit, that is highly appreciated by some and almost wholly neglected by others, and on the whole, does not we think receive the attention it deserves. It is true it is not of high flavor generally, but yet is a very pleasant fruit, and comes along at a good time, soon after the strawberry disappears. At the prices this fruit has sold for a few years past in Boston market, it must be a profitable crop. Good judgment should be exercised in the selection of a soil for this fruit, and it should have just the proper management in order to secure the best results. A mistake has been made by some in attempting to grow this fruit for too many years on the same spot. The plantation should be changed about once in four or five years; a moist rich soil is best adapted to the raspberry.

The blackberry is a most delicious and wholesome fruit, but difficult to grow. The plants are bad to cultivate among because of the thorns. They often winter kill, and the crop is by no means certain. We think there is little money in the blackberry. Let them be grown to some extent in gardens for home consumption, where they can be trained and well cared for.

What shall we say of grape culture?

After years of experience we say just as we have said of pear culture. Under favorable circumstances the crop is a profitable one. There are many choice locations, even in our State, where the grape could be made to flourish, and where a high degree of success could be attained. At how low a price per pound grapes can be grown and yet pay a profit we are not quite sure, though we venture to suggest the price of six cents, and that is a little lower than this fruit is generally sold. This year may possibly have been an exception. Sheltered hillsides with a

well drained and rather dry soil would be favorable to success. For a single variety to raise for the market we have found nothing to equal the Concord, though it is not a fruit of the highest quality.

Grapes require but little care and may be grown in the open field like hops, where nearly all the work of keeping the ground clean can be done by horse power. We have had uniformly good success in producing and ripening a crop, and regard grapes as more certain than most of the fruit crops.

We do not believe in the excessive pruning of our native rampant growers, that some have advocated. Those who will take the trouble to experiment in this direction will soon become satisfied that it is better to leave more wood. The demand for this fruit is increasing, and immense quantities are yearly placed in our markets from the West, so that were we not to raise a pound there would still be a good supply. Growers here have one advantage over their more distant neighbors, that of saving freight and possibly a commission. We still advise all who have a square rod of land to raise a few grapes for home consumption, and those who have choice locations peculiarly well adapted to this fruit, to plant largely of the Concord for the market.

We now come to speak of strawberries, one of the most profitable fruits grown. It may be safely said that the market is never glutted with good strawberries and probably never will be. They are such a universal favorite with all that they are all consumed, and at prices that afford a handsome margin of profit to the grower. This fruit requires a rich soil, plenty of manure and the best culture to yield the best results. It should be the object of every fruit raiser to produce superior fruit. always find a ready sale at good prices. The soil should never be a very dry one, while a wet soil should be even more carefully avoided. The location should be such that no water will stand upon the bed during the winter, for it is almost sure to kill out the plants. Plants should be set in April or early in May; the earlier the better after the ground is in good condition. They may be grown in hills with good results, but we much prefer for a general crop to have them in beds. The plan adopted by our friends in Concord, which partakes of both hill and bed culture, is no doubt a good one. Some varieties make too

many runners, and the foliage is so dense as to seriously injure the crop.

If grown thinly they need to be mulched to keep the fruit clean. Chopped hav, straw or pine leaves are excellent for this purpose. The Belmont growers in years past have raised this fruit in great perfection in beds, and after securing one crop ploughed the plant under. This will do very well if the ground be weedy, but if not, the leaves should be mown off soon after the crop has matured, and the plants will come up with new life and vigor and give a large yield of fruit the next year. From a limited experience we are very much pleased with this mode of treatment. We hope to continue to hear favorable reports from our friend Moore of Concord, who has adopted a somewhat peculiar treatment of the strawberry, but which, among other peculiarities, embraces the mowing off of the plants. If we were to judge of his system by the fine specimens of fruit shown at the rooms of the Massachusetts Horticultural Society the past season, we should need no word of explanation or argument to prove its entire success.

Fruit should be sent to market in all cases with the hulls on, and if possible in baskets that furnish ventilation. He who grows for profit will select such varieties, without regard to quality for the table, as will give the largest number of quarts of fruit,—the Wilson, for instance. Size is an important quality in a strawberry, for everything else being equal the large fruit will always command a better price than the small. The fruit for market should not be left on until fully ripe, as it becomes too soft for transportation. For home use a very different selection of varieties should be made, and the fruit should be allowed to ripen well before picking. Weeds must be kept down, and it is almost useless to attempt to grow this crop unless clean culture is insisted upon. The plants should be covered on the approach of winter. Generally coarse horse manure is used for this purpose, but hay and even branches of evergreens answer a good purpose.

We would strongly encourage the more extensive cultivation of this most excellent fruit, believing that the demand will be even greater than the supply. The strawberry has fewer insect enemies than most other fruits, is as sure to give a crop as any,

is light and easy of transportation, with a sure and ready sale at fair prices. No more if so much can be said of other fruits.

We close by remarking that all things considered, we regard fruit growing as a profitable and pleasant branch of horticulture.

Mr. SLADE. What is the object of covering up strawberries! The object is to prevent them from freezing and Mr. Hyde. thawing and being injured. No man knows better than yourself that it is not extreme cold that kills many things in our climate; it is the alternate freezing and thawing. For instance: I saw an English ivy here in town, which, wherever it is sheltered from the sun, stands very well; but wherever the sun strikes it, it scorches it like fire. It is not the heat: it is the freezing and thawing. This applies to the peach, to the althea and many other things. Whenever my strawberries have been left uncovered, they have presented a half-killed appearance; when they are properly covered, they come out as fresh and green as when the covering was put on them. And you will notice another thing: when there is a thaw in winter, you find that the ground under this protection, if the beds are properly covered, is perfectly frozen, while if you step anywhere else you may get into mud an inch or two deep: showing that the covering protects your strawberries from these alternations of heat and cold and keeps them in better condition.

QUESTION. Is there any remedy for that blight of the Wilson which prevails in your vicinity?

Mr. Hyde. That is a very singular trouble which affects the Wilson. We must have a better variety. I think our friend Moore has a seedling which will prove to be better. I hope he has. The Wilson is somewhat capricious. It works in this way: sometimes it will spread all over the ground and make more growth than you want and present none of that appearance to which I have referred. At other times it will stand still; throw off little offshoots, perhaps, and send out a runner or two, and remain in that way, and this blight will come out in spots over the leaves; and where that prevails to any considerable extent the crop will be pretty much a failure. I do not know of any remedy. I have seen it in Belmont, where the Wilson has received the very best cultivation, and I have seen

it in other places. I cannot account for it, and so far as I know there is no remedy for it.

QUESTION. At what time does it come on?

Mr. HYDE. It usually comes on before the ripening of the fruit and remains during the season. I have not noticed it particularly after the fruit is taken off, because the bed begins to grow brown after the fruit is taken off, any way.

Mulching is beneficial to all kinds of fruit, if you can afford it. I once mulched a pear orchard with meadow hay; it was somewhat expensive, but I have no doubt it was a good thing for the orchard. But there is one objection. Some object to shutting out the light and heat. That is the only objection I see to mulching. I do not think we can get such good pears or apples, in flavor, where the ground is covered. I do not think we can get our crop so forward where the trees are mulched in that way as where the sun's rays are allowed to strike upon the ground. But on dry soil that effect would not be seen so much as on more moist soil.

I believe in mulching strawberries for another reason: it will have a tendency to keep them clean. It is very disagreeable, after a rain, to find the berries ripe but with dirt scattered all over them. Pine leaves make a first-rate mulch. Cheap hay, straw, or anything of that kind answers a very excellent purpose. I would not use sawdust, nor would I recommend the use of tan. It brings with it a great many insects and causes the growth of fungi among the beds. I would recommend leaves of any kind. Some may ask the question why I do not cover with leaves. You are aware that in winter time it often happens that there is no snow on the ground, and then the high winds blow the leaves off; but something might be used to keep them down. I usually mulch just about the time the plants come into bloom; sometimes a little later, though I should prefer to do it before.

QUESTION. What is the best manure for the crop?

Mr. Hype. I am free to answer that question. I am a great believer in well composted stable manure. I apply it to the extent of three or four hundred dollars to the acre. The heaviest application of manure I ever knew to be made was six hundred dollars' worth to the acre. The income from that acre was a little over a thousand dollars, after deducting com-

missions. There was a profit of \$400 to cover merely the labor of picking and sending to market. That is pretty heavy manuring with manure at ten dollars a cord; but I believe in heavy manuring, as you can judge when I tell you that I put on my garden, where I raise potatoes and market stuff, twenty-five cords of stable manure to the acre. Some of my neighbors object to this heavy manuring. One man was cultivating three or four acres of strawberries and getting about half a crop. I said to him "Why don't you cultivate one acre and do it well?" He said, "What do you mean?" I replied, "Go to Belmont, where they get eight hundred, ten hundred, twelve hundred dollars from an acre, and they will tell you how to raise strawberries." He went there and became convinced that his shilly-shally mode did not pay.

In order to raise strawberries to a profit they should be highly manured. It is almost impossible to manure too highly for strawberries. That is, I would put in about all the manure I could, and mix it sufficiently with the soil, to have my plants thrive. It won't answer to put your plant into clear manure, of course, but you want to put as much into the ground as it will hold. Farmers understand how that is. I have had good success with wood ashes, but they are very difficult to get. I have used guano lately.

QUESTION. How would you apply wood ashes?

Mr. Hyde. I would work them into the soil as I would horse manure, and the next spring spread them on the surface, just as we apply guano. We use guano in the spring,—spread it over the beds; and it gives a healthy, dark appearance to the leaves, and I have no doubt it is a good thing to use. I have never been able to get unleached ashes enough to use in sufficient quantity to determine the best quantity per acre, but I can say as to guano. I apply a liberal dressing: I should think four or five hundred pounds to the acre. I do not rely upon that but use it as an auxiliary. Having used my stable manure I use that to help start up my strawberries in the spring.

I have not found the best results from superphosphates, for the reason that I have not a great deal of confidence in commercial superphosphates. I think a great many of them are frauds. Right here let me say that I have used the superphosphate that Dr. Nichols spoke of yesterday. I don't want to call names, for I don't wish to injure anybody; but I used that superphosphate, after as careful an examination as I could give it without analysis, side by side with horse-manure, to ascertain the results from so many dollars' worth of this superphosphate and so many dollars' worth of stable manure. It is sold for thirty or thirty-two dollars a ton, and I am free to say that I regard it as very dear manure for any crop. I should only use it when I could not get stable-manure.

QUESTION. How often do you put on the amount of manure you spoke of—twenty-five cords?

Mr. Hype. Only once. For instance: we prepare our ground in the spring and the manure is applied. Of course the first year the plants cover the ground, and the next year we get a fine crop. When the second crop is off, about the first week in July, we turn them all over and put in another crop. We do not use that land again for strawberries for three or four years, because, with strawberries as with other crops, we must have rotation; and they do not do as well on the same soil again immediately.

As to apples, you know how Mr. Clapp of Dorchester has raised them in great abundance in a region perfectly infested with canker-worms. He has raised twelve hundred dollars worth of Gravenstein apples when all around him there was not an apple left. How did he do it? He put around his trees wooden troughs that he had made. He had one set that lasted ten years. They are wooden troughs cut out like a gutter, put around the tree and then a little roof put over it, the interstices being filled with oyster-shell lime or something of that kind, packed down firmly. Into these troughs he put crude petroleum. That had to be renewed once in a while, and once in a while the canker-worms were so numerous as to bridge it over, and a few might get on to the tree; but while everybody's trees in Dorchester (now Boston) were so infested by cankerworms that every green leaf was destroyed, his orchard has remained green and flourishing, and he has raised fruit right along. It is true, it is considerable trouble to do this, but it pays abundantly. Another man has preserved his orchard by the use of printer's ink, which is better than tar. His way of doing it is to put a strip of tarred paper around his trees (canvas would answer a better purpose), and over that spread

printer's ink. The only thing to be guarded against is that, unless you are very watchful, they will sometimes bridge the strip of paper and a few will get over. But if you are careful (and of course vigilance here, as elsewhere, is the price of safety), you may protect your trees in this way. You must look out that they do not get over in any large numbers. Apples can be grown in large quantities, in spite of cankerworms and all these other insects.

Mr. MOORE. I will endeavor not to occupy much of your time, and will simply talk a few moments about some of the fruits.

I have been growing grapes for quite a number of years. I have now five acres. I find no difficulty in growing them. Of course, you must comply with the conditions named by friend Hyde. First, you must have a good soil and a good location. The soil to grow grapes in Massachusetts should be, of the two, rather light. That is, the grape wants a warm soil, and heavy soils are not generally warm. A southerly or south-easterly exposure is probably the best. Select a slight slope, where no water will stand, and where you will get more heat from the rays of the sun. In such a location as that, there cannot be any difficulty in growing grapes in Massachusetts; certainly, I do not have any trouble upon my land. I regard it as the surest crop of all the large fruits,-calling the berries the smaller fruits. The grape is less troubled by insects than any other crop. The principal trouble you will have from insects will be from the rose-bug. That pest you can get under after a little while, by picking them off. They come into my field from the west side usually, with a warm wind. I generally pick them off of the first row, and they will trouble me for about a week. Years ago, I would pick off a bushel of them, but now I have got them under, so that I do not have much trouble with them.

Now, in regard to the planting and cultivation. The grape does not, in Massachusetts—the strong growing kinds at least—require a very rich soil. A soil that is sufficiently rich to grow forty bushels of corn to the acre, is rich enough to grow grapes like the Concord, the Diana, the Hartford, and the Rogers,—the Rogers being even a stronger grower than most of the other kinds. I have found it impossible to grow the Diana

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upon rich soil; it made so much wood that it does not mature; even if I laid it down, it would not fruit; whereas, upon poor soil, I have no difficulty.

I plant my vines ten feet apart one way, and seven feet the other. The reason why I do not have them the same distance apart each way is, that I may go through one way with a horse and cart, if I see fit. I do not think it is desirable, here in Massachusetts, to plough exceedingly deep. I am satisfied that ploughing fifteen or eighteen inches deep makes the crop later. I may be wrong about it, but I think I am correct there.

In regard to pruning, any system, no matter what it is, or no system, that will keep your trellis or your poles on which the vines grow, full of short-jointed, well-ripened wood, will give you a crop; and no matter how they are handled, you will get two or three crops. The difficulty comes after you have taken off three or four crops of grapes. Then, when the wood has become old and a little crabbed, and runs into a good many shoots, you will find more difficulty, if you do not exercise a little more judgment than perhaps some use. You will want to cut out some of that old wood, and get new wood in its place. New wood, short-jointed, well-developed buds, will give you a good crop. Your next year' crop depends upon the wood you grow this year.

Perhaps I need not say anything more about grapes, unless it may be about varieties. I buy every new thing that comes up, and get humbugged generally; but then, I rather enjoy it. I have found the Concord almost the only grape that pays me a profit; perhaps I ought to mention also the Hartford. I realized from a very small piece of Hartfords that I had this year, which came earlier than the others, more profit than I did from my Concords, getting about fourteen cents a pound for two tons which I had. Now, we do not have to take the trouble with our grapes at Concord that the western folks do. We take our bushel boxes into the field, pack them full of grapes, load them into the wagon in the field, send them to Boston, and sell them by the box for what we can get; we do not have to pay anything to the commission merchant, but take all the money there is in it, weighing the boxes before they are put up, and changing boxes with the buyers. This makes a very simple thing of it, and one quite readily done.

Perhaps you may think I state it rather strongly, but I believe I can raise a bushel of grapes as cheaply as I can a bushel of potatoes: I have no doubt about it. In the first place, it is no drain upon the farm for manure, after the first start. I have two acres back of my house on the hill, which some gentlemen here have seen, which was an old pine plain when I was a boy. Ten years ago, the land would not have brought ten dollars an acre, after the wood was off, and it had run up to birches and a few sapling pines. I cut off the trees and planted that piece with grapes, without the addition, mind you, of any manure at all. I have never put any manure there since, and yet I get all the growth I want. I would not have you understand by that that it is not necessary to manure grapes: I think it is often necessary to do it; but while I can grow all the wood I want, why should I manure? I cannot see any reason. When I begin to see the want of manure, then I am going to put it there; but while I can grow all the wood I want, and get all the fruit I want off of those vines, why should I put manure on? I might perhaps say further, that I have grown grapes to some extent, simply for the reason that they do not require manure. It is a constant drain upon the rest of the farm to raise any fruit that needs manure. As to the quantity of grapes which may be raised to the acre, I should say, without stating it high, that the grape runs all the way from two to five tons to the acre. I have seen at the rate of nearly ten tons to the acre raised, but from two to five tons I think would be reckoned a fair crop.

QUESTION. What will they be worth?

Mr. Moore. You might just as well ask me what potatoes will be worth next year. It is a hard question to answer. This year, the price has been lower than ever before, and that not because of a surplus of grapes, but from the fact that there were spoiled grapes in some locations, and those spoiled grapes were put into the market, and the market broke down. Every farmer knows that if the market once breaks down, it is pretty hard to get it up again that year; and more so with grapes than potatoes, because grapes are considered a luxury: buyers will continue to buy if they get good fruit, but let them get poor fruit, and they drop off, and the demand lessens. I have averaged seven or eight cents a pound—that is all. But

grapes can be raised for three cents a pound, and pay better than any crop you raise down here. Three cents a pound is a dollar and a half a bushel, and I think grapes can be grown as cheaply as potatoes; they certainly can with me.

Now, perhaps I have said enough about grapes, and as I shall be able to speak but a little while longer, I will say a few words in regard to strawberries.

I am growing strawberries quite extensively, and I regard them as a profitable crop, when properly managed. Without any particular preliminaries, I will say, that my usual method of planting is to plant them in rows, four feet apart, and twelve or fourteen inches apart in the rows. Whatever way I want to grow them, I make up my mind to have them in straight lines. If I am going to make a bed which is to remain three years, as it would be necessary to do with the Triomphe de Gand, the Agriculturist, or the Jucunda, for the reason that none of these large varieties can be grown to a full crop under what is called the matted-bed or Belmont system, it is the best way, because in single rows, with the runners cut off, they can be made to produce good crops.

The greatest success that I have realized in growing strawberries, has been from mowing off the tops. You will think that is a pretty rough operation, but I will venture to say that not once in twenty times can a man grow a second crop of strawberries, with any success, particularly under the mattedbed system, without mowing the tops. Immediately after you have taken of the crop, don't wait, but mow them all over. Don't have any nonsense about it, but mow them right down close to the ground, and then rake the leaves off clean. Suppose you are going to keep your bed over, it will not be half the work to weed that bed after it is mown, that it would have been if you had not mown it. Then with a horse and a smallsized plough, go through the paths and turn two small furrows together—in all a strip from thirteen to fifteen inches wide: then with a Hexamer-prong hoe level the furrows and gather any rubbish in small heaps, after which the bed should be loosened with a small-pronged hoe, and any white clover or grass rooted up. By doing this it will be much less work to finish the weeding, which should be done at once, and you will be astonished to see what a handsome bed of strawberries you will have in a few weeks. I persuaded my friend Hyde to try the experiment, and I believe I heard him state at the Horticultural Rooms that he raised the best crop he ever grew.

In the discussions that we have had at the Horticultural Rooms, Prof. Russell asked his opinion of this practice of mowing the tops, by Mr. Strong. Well, the professor, who is very strong in his opinions, said, "In the first place, it is contrary to common sense, and contrary to nature. It is all wrong, there is no doubt about it; and don't any of you try it." That was pretty strong language, but I thought I would wait and see how he would come out before we got through. He said it wasn't scientific: that is another term used. In the discussion afterwards, I said simply this: that I had tried it for a series of years; it was not a theory, it was a fact; and the answer to his assertion that it was not scientific was this: "It is a fact, and if it does not accord with your science, I rather think your science has got the worst of it." Then I took the ground that it was scientific, and although I am not a scientific man, and do not pretend to be anything of the kind, I undertook to prove it in this way: first, that when fruit trees and plants have perfected their fruit, their leaves have performed their functions. Take the apple, the peach, or almost any other tree, the leaves fall before you get another crop of fruit. They have elaborated the sap, perfected the fruit and seed, which nature intended they should do, and they have got through with their business. Then, there is another thing in regard to strawberry plants, which is not generally understood,—that the roots are perennial, to a large extent. Those roots begin to die immediately after the fruit is produced, and during the season most of the old roots die, and new ones start out directly above the Those roots dying out, the leaves exhaust the plants, which the roots are in no condition to support. Now, by taking off those leaves, which have become useless and exhaust the plants, we simply aid nature, and thereby do a scientific thing. I know, therefore,-I do not guess about it, nor is it any nonsense or theory, but is a well established fact, -I have practised this method for many years. It has lately been practised by my neighbors with perfect success.

QUESTION. You don't remove the leaves?

Mr. Moore. I rake off everything I can, at the start.

QUESTION. I have heard some strawberry growers say that liquid manure was the best for strawberries. What is your experience in regard to that?

Mr. Moore. Liquid manure is used by exhibitors at horticultural exhibitions to some extent, to make large fruit, but it would not be convenient, perhaps, to use it on a large scale. I have used a cord of manure, which cost \$20, from the pork slaughtering tanks,—where they steam the heads and waste pieces of the hogs, to get out the grease,—mixed with five cords of beach mud to the acre, and had as good success as I ever had on the light land I was telling about.

QUESTION. Do you ever use what is called night soil on strawberries?

Mr. Moore. I have not, to any extent. I want to use a manure that will be lasting in the outset. I knew that this waste, having a large portion of bone in it, would be lasting. I use stable manure, but I want it decomposed; because, if you use barnyard manure in anything like a raw state, you are very likely to be troubled with grubs. I do not have any difficulty with grubs, on land that has been planted for some two years before setting out the strawberries.

Mr. Hyde has referred to the difficulty with the Wilson strawberry, in consequence of its not running. I do not have any trouble at all. I attribute that to the planting out of the strawberry. The strawberry should be planted as early as you can get your ground dry enough to plant. Some of my neighbors run a furrow along, and set the plants on the side of the furrow. I think that is a poor way. One objection is, that I want my rows straight. If there is anything I pride myself on, it is the straightness of my rows; nothing would annoy me more than to have crooked ones. Then, again, I can't afford it; it is not a profitable way of doing the work. I generally run a roller over the field, and lay down a line that will stretch clear across it, and open a furrow with the edge of a spade, four inches deep. I generally cut off the ends of the roots, and then set them against the smooth side of the furrow. I think a good deal of the trouble in raising strawberries comes from bad planting. You will find plenty of farmers, men who are so anxious to get along quick, and to save a little time, that they do it at the expense of a good deal of money in the end. They will put a whole wad of roots in a bunch, and of course a large portion of those roots will rot, and the plant will stand still; it won't grow. No matter where I plant strawberries, if it is on nothing better than a gravelly hill, they always cover the ground the same year. On the hill to which I have referred, the vines planted last spring now cover the ground, and are a foot high. It is simply from being what I call well planted out, and the cultivation I give them. That is, I keep the ground stirred; I don't raise any weeds. I have raised just as good a crop of weeds as was ever raised in Bristol County, but on figuring it up, I made up my mind that it was about the poorest crop I ever raised.

QUESTION. What is your experience with reference to planting in the fall?

Mr. Moore. I do not do that. I have planted some this fall; some new varieties. I have a passion for raising seedling strawberries and grapes, hoping to get something that will be pretty good. I think I have got it now. But I have raised a great many, with which I had no success.

QUESTION. Why won't a furrow answer?

Mr. Moore. In the first place, you cannot get your rows so straight; and, in the second place, by the time you get your ground levelled, you have not gained anything in time.

The CHAIRMAN. The farmers in various parts of the Commonwealth have, in a degree, followed the suggestions of Dr. Loring. He has suggested that, instead of attempting to raise half a dozen crops, the culture of which they did not understand, they would make a specialty of certain things,—fruits or vegetables. I know that this recommendation has been followed in some parts of Eastern Massachusetts, and with good success. Dr. Loring is present, and I wish he might follow up some of the suggestions he has heretofore made, which have proved so important and so profitable to the farmers who have followed them.

Dr. Loring. It seems to me a little hazardous for me to undertake to discuss fruit culture, after the reputation I have secured in the Commonwealth as opposed to fruit growing. I have explained my position on the fodder-corn question, and now I rise for another explanation. I have never opposed fruit

growing at all, sir. I have said that I did not think the growing of apples in large quantities was a part of profitable agriculture in this Commonwealth; and when I assumed the ground to which you, sir, have alluded in calling me out, with regard to the adoption of specialties in farming, I rejected the growing of apples, because it seemed to me that that belonged so much to general farming that it did not come into that branch which was specially profitable, and which you could pursue here in Massachusetts with advantage.

Now, let me explain a little about my views, and about orcharding as conducted in the old-fashioned way. that there are certain localities on almost every farm upon which apples can be grown, to a certain amount, with some advantage,-ground that is not fit for the rapid growing of the heavy feeding crops. I mean by that, soil that is not too strong, has not too large an amount of either vegetable matter or clay in it. Soil of that character, it seems to me, is fit to grow apple-Shaley land, land around ledges, land in which there is a great deal of decomposed rock, and a great deal of mineral matter, and especially the soluble salts, I have seen used for the growing of orchards to great advantage, especially in these modern times, when the growing of an apple-tree is a very difficult thing. Now, wherever there is upon a farm a piece of ground of that description, I would not object at all to occupying it with some apple-trees; not that I think those trees are going to make the farmer's fortune, but because I think they are a useful adjunct to the farm. The apple is a healthful fruit, and whenever you can get a crop,—which you cannot always do, -it is a good fruit to have upon a place. But in regard to the profit of orchards, as formerly planted by our ancestors, I still have great doubt, and I think the doubts are well founded. I have discovered that, more than seventy-five years ago, the same doubts were raised in England, in regard to the profit of If you will look into Sir John Sinclair's apple orchards. "Code of Agriculture," you will find that the rents of orchard lands were lower than the rents of any other agricultural lands in the kingdom; and my own experience and observation have shown me that there was good reason for it.

I can illustrate by describing the condition of affairs that

existed on my own farm in 1856, when I took possession of it. That farm had been famous for its orchard. It was one of the early orchard farms in the State of Massachusetts, and the trees were all of rare quality. They were nearly all of them imported by an ancestor of mine from England, and were the choicest varieties then known in England; what are known as the "Garden apple"-I doubt if it is ever seen outside of Essex County -and the "Pickman Pippin," one of the finest apples for cooking in the world,—a large, handsome, yellow apple, with a blush on one side; its acid as keen and lively as the cranberry, and perhaps a little sharper. That apple was among those brought over, and the reputation of that orchard was abroad over all Eastern Massachusetts. All the connoisseurs and amateurs in the place went there to get the best apples to be found. orchard was planted somewhere about the year 1810. occupied the best land on that farm, right around the barns, which were large and ample. There was one barn capable of holding fifty or sixty cows, and the hay to feed them. round that barn, the warmest, the mellowest, the best drained. the finest land for all sorts of vegetables, especially for the growing of onions, was occupied by these orchards; and much of the best grass land of the farm, which is very fine indeed, was occupied in the same way. These trees had stood there nearly half a century when I took the place. For fifteen years after they were planted, I find no record of the produce from the trees; I would not expect any; but meanwhile it was necessary, in order that the trees might grow thriftily, that the land should be kept up, and the farmers who occupied the farm were deprived of the profit of getting their crops from the land immediately adjoining the barnyard, and subjected to the expense of hauling the manure over a mile to other fields, in order that these apple-trees might be kept in good condition. Then I find an entry in the record of a certain year, after this orchard was fifteen years old, that the tenants paid their rent -which I think was \$1,200-from that orchard. It was considered a great feat on the part of the orchard, that it had paid the rent of the farm; but it was so rarely that it paid the rent of the farm, that they thought it a matter worthy of historical record. But only every other year, for the remaining years

until the trees began to decline, did that orchard yield anything which was considered worthy of record. Meanwhile, the trees were manured to a tremendous extent; an abundance of barnyard manure, and a great quantity of night soil, were annually employed in keeping those trees in what was called a good growing condition. About the year 1835, the yield of that orchard was so great, that there were twenty-eight hundred barrels of apples barrelled on the farm, and innumerable heaps left to decay on the ground; but the price which the apples brought, upon which the expense of gathering and barrelling was laid out, was so low, that it was not considered, by any means, a profitable crop.

When I took the place, in 1856, the trees were all out of condition. They were enormous, as you may well suppose; they had grown as all apple trees grow in very fertile soil which has received an abundance of manure. What was the first thing for me to do? I had been told by old Col. Pickering, who is the best agricultural authority in Essex County, that bone was the manure to restore apple-trees. I thought he knew all about farming, and I went to work. I cleared out all the dead wood and any limbs that seriously interfered with the rest of the tree; I had a good many of the trees grafted with the choicest fruit I could find; I had the soil all round the trees revived with lime, bones, and everything of that description; I spent a great deal of money on those old trees; I had a respect for them as ancestral trees, in the first place. and in the next place, I expected to make my fortune by renewing those old apple-trees. Well, they looked finely, for about three years; everybody driving by said, "A new man has got hold of this place, and he makes it shine." I thought so, too; and by-and by, I got one crop of fair apples, but the old vitality was not there. The trees would blossom.—they tried hard; they did the best they could,-but the "Pickman Pippin" and the "Garden Apple" were small; they did not grow rapidly enough to keep away the insects that infested them, and they were late. The crop was never a good one, so that the people who used to come there to get their favorite apples, after seeing the orchard renewed, went away and said I was a humbug, and the apples too. That was the result of my

attempt to restore that respectable old orchard, and that is the history of the profit of that orchard, one of the finest ever planted in the State of Massachusetts. Now, do you wonder that I take a little exception to occupying such lands as those, right round the farm buildings, within two miles of as good a market as there is in this Commonwealth, with apple-trees that gave no fruit to speak of for fifteen years, and were old at fifty? And then the competition is with everybody else, who has just as good a chance as you have.

That is one thing. But there is another trouble. We are not only besieged with insects injurious to vegetation, but every man knows that it is the hardest work in the world to make an orchard bear. I have had a hundred men, if I had one, come to me and say, "When you come round our way, I wish you would come and see what a thrifty orchard I have got,-how well it makes wood; but not an apple can I get." I have no doubt there are a hundred, perhaps more, orchards in this State that are simply ornaments to the ground upon which they stand; why it is, I cannot tell. I have recommended root pruning, surface dressing with bones, keeping away the barnyard manure,-which will make wood but not fruit,-and all sorts of things of that description; but somehow or other, the cycle has come round in New England when the apple-tree does not do well on our soil, so that I have come to the conclusion that it is not profitable for the farmer to occupy good land, on which he can raise annual crops, with apples. I do not think it is worth while for him to occupy his time in fighting worms and insects, when he could be engaged in more profitable business. It is a good plan for him to plant an orchard large enough to supply him with what apples he wants for domestic consumption, and a little early fruit, which is handy to put into his wagon as he goes in to the market in the morning, but beyond that, I do not think it wise for him to go. The wholesale growing of apples is not, in my opinion, a profitable branch of agriculture in Massachusetts. When I remember that the West is pouring in an abundance of apples, of a satisfactory quality, brought by rail, which are sold at a very low price, it does not seem to me that the farmers of New England can profitably compete with them.

But the growing of small fruit, of every description, is another thing. Take the strawberry. Every man who has help or has a family, can find leisure moments when his help or his children can be profitably engaged in cleaning up a strawberry bed, taking care of it, and gathering the fruit for the market. So the suggestions of Mr. Moore, in regard to the cultivation of strawberries struck my ear very favorably, and I was exceedingly interested in them. I can add only one thing. He spoke about the manures for strawberries. I have never seen anything in my life that would make strawberry vines fruit so rapidly as ashes. If there is any gentleman in the room who has tried them and found any objection to them, I wish he would say so.

QUESTION. What time of the year would you apply them? Dr. Loring. Early in the spring, on the surface. I never would put ashes underneath for any purpose.

QUESTION. Leached or unleached?

Dr. LORING. Either.

QUESTION. Upon what kind of soil?

Dr. LORING. I have never seen any soil which was good strawberry soil, upon which ashes would not have a good effect. I mean by good strawberry soil, a warm, not too heavy loam, for I do not believe in raising strawberries upon a piece of heavy clay land; they will not do well there, but they will do well upon a somewhat light and warm loam, and on such soil as that, I am sure that ashes applied to the surface will always work well. I do not believe at all in burying them beneath the surface of the earth. I think they need the influence of the atmosphere in order to bring out their fertilizing properties, and that they are dissolved by the influence of the air and the rain in such a way that their fertilizing properties are carried down to the rootlets of the plants with great activity.

Now another thing. All small plants require warmth, and that is the secret of what Mr. Moore said about the amount of fertilization that grape-vines require. I noticed he said, that if grape-vines bore well, made wood enough, and fruit enough without manure, it was best not to manure them. That is true enough; but still, the old-fashioned mode of burying bones and manure four or five feet deep for the supply of grape-vines was entirely erroneous, and for this reason: the roots of the

grape-vines were attracted down into a cold bed, which was utterly at variance with all the wants of the plant, and especially of the fruit. The grape belongs to a warm climate; always grows, in northern latitudes, in a warm spot. When our ancestors came here they found, as the old historian tells us, grapes that would rival the ancient grapes of Eschol. It was always in the warm, sheltered nooks and against the rocks that they found them. Now to attract the roots of any plant of that description down into the cold regions of the soil is entirely wrong, and no man can gainsay it. It is surface dressing, therefore, it is an abundance of ashes upon the surface, that is best adapted to increase the fruit-bearing of grape-vines. I think the same thing holds good in regard to the peach, and that if we will adopt the practice of surface dressing all the small fruits, and all those delicate fruits that we are beginning to grow, it will be of great advantage to us; not using the heavy, fatty, nitrogenous manures, but such manures as I have described, which are filled with soluble salts and phosphates. I think that rule will hold good with regard to a very large proportion of the fruits which we can now raise to a profit. That we can grow pears on quince stocks to a profit, I have no sort of doubt. It is a delicate, nice piece of business, it is a matter of horticulture, I know, but there are really few farms upon which a piece of land fit for that purpose cannot be found. The trees need protection; I do not think there is any delicate fruit in the world which will bear the colds of New England. So true is this, that the old New England St. Michael's pear, which, when it was in its glory, was not surpassed by any other variety,-I wish it would come back again !--will not grow at all unless trained as a wall fruit. I have seen it trained right against a wall, and a very curious thing about it was, that wherever a stem hung out, and a pear formed upon it, it was split and cracked under the influence of the wind. I think that peach and pear trees should be sheltered, and I think there is no farmer in the State, with a market open to him, who cannot afford to grow such fruits as I have spoken of. I have always said that they enter into the specialties of New England farming like the cranberry on Cape Cod, seeds in Essex County, tobacco in the Connecticut Valley, and just as the growing of vegetables may be made a specialty on every piece of land near the great markets.

Mr. — I wish to say a word in regard to the apple and peach. It is well known to every individual who has lived to · the age that I have,—threescore years and ten and upwards, that in old times, when the snow lay on the ground from the latter part of the fall even until into May, and sometimes until the latter part of May, especially around the walls, and in the orchards, that we had enormous crops of peaches and apples. The ground was generally frozen before it was entirely covered with snow, and the frost came out of the ground considerably later than it has in latter years. Our orchards, both apple and peach, never came into blossom until after the frost came out of the ground, consequently, it was later in the season before they put out for bearing. We never had much of any frost after they came out of blossom, and consequently there was nothing to kill the fruit. At the time of the great September gale, some fifty-four or fifty-five years ago, the trees were so heavily loaded with apples, that when they were blown off, they not only covered the ground, but laid piled on top of each other. If apple and peach trees could be kept back now as they were then, I have not the least doubt that they would be as profitable and fruitful now as they were then.

The experiment has been tried by some, I believe; I have heard of one man who had an orchard of some five hundred peach-trees, who became discouraged with it, on account of its not bearing. It would blossom very profusely and very early in the spring, but produce no fruit, and by-and-by he came to the conclusion that he would cut it down as perfectly worthless; but some time in the course of the winter, when the ground had become perfectly frozen and hard, he turned his sheep into it, and carried in a large quantity of what he called rubbish straw, old stalks, &c.,-which covered the ground all over, and when it came spring, the trees did not blossom as usual; he thought he had killed his trees. He did not cut them down as he had intended, and when finally the frost came out of the ground, his peach orchard bloomed profusely and bore abundantly. I believe it would be just so now, provided the fruit-buds could be kept back. It is the late frosts which come in the spring of the year, which spoil the fruit, not while the trees are in blossom, but after they have blossomed and the fruit has set. The frost comes and nips the fruit, and it drops off.

Now, the experiment can be easily tried, and at a trifling expense. After the ground is frozen hard, cover up a large circle around the tree, and keep the frost there as long as you can. Then let the tree come into blossom, and see if you do not have fruit.

Dr. Durfee. I think I will say one word about the cultivation of pears. My friend Dr. Loring has referred to dwarf pears. I want to say, that I have purchased a great many pear-trees. I have more than five hundred now, and I don't think I have one that was grafted on the quince that can stand alone. I have therefore come to the conclusion that our soil, at least, is no place to put pears grafted on the quince. There is no root to it. I say to any one who desires to set out pear-trees, be sure to set out standards. Then I want to say again, be sure and know what you get when you set them out.

Dr. Loring. That is the hardest thing to do.

A few years ago, when riding on the Western Dr. Durfee. road, with a company of agriculturists, I remarked to one sitting near me, "I want to get about a hundred of the best kinds of pears." Said he, "I can tell you where you can get something that you can depend on." I said, "I shall be happy to know: where is it?" The reply was, "Go to such a nursery-man, and tell him you want a hundred pear-trees of the best quality, and you will be sure to get them; I know you will." So I took the trouble to send my order to that party: he was a particular friend of mine; I had been very intimate with him, and I thought I should get a good lot of trees. The trees came 10 my place; they are now in bearing, and if I told the trath, I think I should have to say that there are not more than four varieties out of that hundred that are worth raising. What is the result? I have got to graft the whole of them; there is no other alternative; that is, all that have any roots, and can stand alone; some of them, we have had to stake up. I repeat, therefore, if any of you are disposed to set out pear-trees, be sure you get standards; and be sure you know what you get, -if you can. That is the great difficulty.

Now, as to the profit of pear-trees, I will state one instance, within the limits of this town. I have tried to encourage peo-

ple to raise pears, grapes, peaches, and all those good things. There is a farm lying within about four miles from here, where, a few years ago, the man who lived there set out a little pear orchard. He is dead and gone, but the property has come into the hands of his sons, and last year, they leased the whole farm to a gentleman across the river, and they fixed the rent of quite a large tract of land,—some of it pretty decent for cultivation, and a great deal of it costing more to cultivate than it is worth,—they fixed the rent of that land on the amount of pears that they had obtained from that place last year. That man paid his rent because he expected a great crop of pears this year, and he had a large quantity, but not so much, perhaps, as last year. I do not believe that farm could be let for more than one-third what it is, if it were not for that orchard.

Dr. Loring. Are those standards, and how old?

Dr. Durfee. Yes, sir. I think they are all standards. I should think they were seven or eight years old, and they are growing finely. Some of them are twenty feet high.

QUESTION. What varieties?

Dr. Durfee. I don't know the varieties, but he raised a great many varieties.

Now, my friend asks what varieties of peach-trees I would plant. I would get the white peach. I don't think the Crawfords fit to raise. I cannot raise good Crawford peaches under cover; it is impossible; they are sour and bitter. But get the "Early York" and you will get a first-rate peach. Get "George the Fourth," and you will get the best peach that I ever grew. The "President" is a most excellent fruit. The "Stump-the-World" is a good peach. There 'are but four or five kinds that I can think of that are worth raising; that is, that I want to raise.

I was very glad to hear the remark that was made in regard to putting into the borders of grapes large quantities of bones and dead animals, and burying them so deep in the ground that they will never be heard from afterwards, unless you dig them up. I have seen the folly of this practice, and I know that the roots of the grape will not go near where they are, because I have seen it. As my friend (Dr. Loring) says, if you want to enrich grape-vines, enrich them near the surface. I will mention a singular fact in regard to grape-vines. We plant

them inside and outside of our grapery—one inside and then one outside, alternately. A few weeks ago, I had occasion to remove the soil inside, and concluded it was better to take it out. I think we had enriched it as much inside as out, for the sake of nourishing the roots. But when we came to dig down, we did not find any root there; the truth was, the roots ran outside, the whole of them. I suppose they wanted to enjoy the sunshine; I don't know what else they were after.

These ideas have been thrown out, in order that if any of you are going into the business, you may know some simple things about it. I wish there were more here to take up the subject and discuss it. It is one of great interest. I think if any one would take it up and give his attention to it, he could accomplish a great deal. If you want to get peach-trees, the best way is to go to Long Island and buy them at the nursery, selecting those about a year from the bud, bring them home, set them out in pots, and then cut off the top.

Dr. Loring. What Dr. Durfee has said about dwarf pears is very interesting; but the plan has been adopted in Essex County, of setting dwarf and standard trees alternately. It is very difficult to make the trees stand up. It requires as much manure to grow dwarf pears as it does to raise a crop of mangold wurzels. They require a great deal of manure, but they mature early, come into bearing early, and they will really come into bearing and go out of existence before a standard will get ready to go to work. That is the advantage of trees on the quince stock.

The statement by Dr. Durfee, in reference to the roots of grape-vines coming out from under glass into the warm light, where the sun shone, is an interesting fact also. You may not all have heard of certain experiments that have been made with the glass of green-houses, grape-houses, &c. It is one of the most interesting of modern discoveries, if true. Gen. Pleasanton, of Philadelphia, tried the experiment of inserting, in every eighth row of panes in his hot-house, a blue pane of glass, the whole length, as I should judge, of his house; and he found that the effect of that blue light upon his vines was such that the grapes in the houses in which that glass was inserted matured many days earlier than where the blue glass was not inserted; that the growth of the vines was much greater, the

quality of the fruit better, the grape larger, and the crop earlier, by the introduction of this blue glass into his grapehouses. He explains the fact upon the theory that there is something in the blue glass which modifies, to a certain extent the sun's heat, and in that way makes it more advantageous to the growth of plants. He went on with some curious experiments. He took a litter of pigs, and put half of them into a green-house made in the usual form, with uncolored glass, and the other half of that litter of pigs he put into one of his greenhouses where he had the colored glass, and the difference in the growth of those pigs was so great that in two months those under the blue glass had outstripped the others by more than twenty-five per cent. He then took a sickly bullcalf (I never saw a bullcalf that was not sickly in my life) and put him under the influence of the light through the blue panes of glass, and the effect was wonderful. He revived in a short time, began to grow, and in less than two months he was a new calf, regained his health and spirits and strength, and throve as well as any animal could.

Now, this is a thing worth considering. The experiment is to be tried in Salem. In a little grape-house that is being constructed there, blue glass is to be inserted, and I hope we shall have an opportunity to learn the result.

Dr. Durfee. Can you tell what effect it would have on a sickly child?

Dr. Loring. There it comes right home. If it is true that blue glass has such an effect upon vegetable and animal life, that is under our control, I should be in favor of having blue glass put into our windows. I have no doubt it would be useful. At any rate, I am willing to try it. What the effect of this blue shade is, I cannot say. I don't suppose it can be accounted for. I don't know how it was discovered, but there is the fact exactly. As Prof. Agassiz once said to me, "Science is nothing but deductions drawn from facts," and there are the facts. That is what Lord Bacon said, too, two hundred years ago.

The CHAIRMAN. Farmers, themselves, are oftentimes surprised at their own foolishness. After selecting, as Dr. Durfee says, with great care, the best fruits,—apples, pears, peaches, or whatever they may be,—they take but little pains in regard to the soil and location in which the trees are planted. In a

climate like that of New England, if the location is not such as to protect the trees during the gales and high winds of the spring months, there should be hedges planted to protect them. My little experience in my own section of the State has led me to believe that our orchards do not, as has been generally supposed, suffer from the north-east winds, but from the south-west winds which prevail at the time when our trees are in blow, and whip them almost to pieces. In very many cases, farmers have been led to believe that their fruit crop has suffered from the severity of the winter months, when it was really on account of these high winds which prevail when the trees are in blow. Those orchards in our section that are protected by what is called "the back-bone of the cape," facing the southwest, have proved fruitful and profitable, and I have seen other orchards surrounded by hedges that have done well. It seems to me, therefore, that while we exercise great care in selecting the best varieties of fruit, we should also be careful in the choice of location.

In most seasons there are apples enough in Brewster and Orleans, and that part of the county; there are in Barnstable very few apples. I will venture to say, that if there are crops anywhere in that section, the trees have been protected, for my own experience has led me to believe that it is only in that way that a crop of apples can be obtained.

Dr. Durfee. I do not think it is any object for anybody to attempt to plant an apple orchard now. I am very much discouraged in regard to apples; I think it is next to impossible to raise a crop. I have enough slugs of the canker-worm lying on the ground in my garden, to eat the leaves of all the appletrees in this city, if they were suffered to go up the trees. The number is perfectly incredible. When I say there are thousands, I do not exaggerate. I find them going all over the county, far and near. The few trees I have in my garden, I have tarred, and I supposed, up to last year, that I had conquered the worm. I did not have a very large number last year, but wherever they did light upon a tree, it was death to the crop; but this fall they have come in greater numbers than I have ever seen them before.

I think, if we are going to do anything to protect our trees, we must begin in time. I did not begin soon enough. I am

very sure, from the attention that my man in the garden has paid to them, that very few have been able to pass over the tarred paper that I have put around the trees. In a few instances, where the rain affected the tar so that it did not stick to them, they would get over it.

Mr. Goodman. I should take some exception to the remarks of Dr. Durfee, so far as our locality is concerned. It won't do to say that apples cannot be raised on account of the cankerworm. There are no canker-worms in the western part of the State. In that part of the State, there is a large quantity of land adapted to apple-trees, that cannot be used for anything else. Therefore, we find apples a good crop to raise, on land that is almost barren, or, from its exposed situation hardly adapted to farming purposes. We raise large crops of apples up there, and find them a valuable crop, and shall continue to raise them.

So it is with pears. There is no tree that is so much affected by the soil as the pear. You cannot raise pears on the sandy, gravelly soil of Connecticut; but take a soil with some clay in it, or a good loam, and pears will grow there. Although I agree that pears on quince stock are not so good as others, still, they are good. They were grown in that way among the ancients. The ancient Greeks always cultivated the pear in that way, and it was the only way they could do it. It grows much more rapidly on the quince stock than on the pear. The practice with us is, to grow dwarfs in between the standard trees, and the dwarfs die out before the others come into bearing, or, at any rate, soon after, and then the ground is cleared. I have some forty dwarf trees, and this year they have all borne profusely, so that I had to support the limbs. That land has been in pretty good condition, all the time. I always top-dress in the fall, and mulch to some extent, and those trees have borne fully for many years. But there are standards which are highly recommended for a great many purposes, particularly for coming into early bearing. We have the "Doyenne d'Eté," now recommended as the best early pear. The standard tree will come into bearing in four or five years. The only trouble with it is, it is a rapid grower and a heavy bearer, and wants pruning, and the land ought not to be highly cultivated. That is followed by various other sorts, particularly the Seckel, the Bartlett and the Lawrence. Almost any farmer can have a crop, and there is no tree that requires less pains and attention. Good trees are to be got from good growers, and they are very cheap. The great trouble is, they are not planted with any care. Instead of there being a little hole dug with a spade, and the roots put in just as it happens, you want to make a hole large enough to spread the rootlets out in a proper way, and then the earth put in and carefully packed. A tree that is properly planted in that way, the ground having been previously prepared as it should be, is half grown; there is no difficulty about it. The dwarf trees, of course, require more manure than standard trees; but, after all, I lose more trees by having my ground too rich than I do from any other cause.

There is nothing that troubles the pear with us so much as the sap blight. It is a different thing from the insect blight. It comes because of the ground being rich, and the wood growing too heavily, and in the fall the sap is frozen, and the tree killed. I have lost, for several years past, a good tree almost every year in that way. Therefore I am particular not to manure my trees too highly. After giving my standards good cultivation for two or three years, to start them, I do not give them anything more. My dwarf trees, I generally dress every year, in the fall, and mulch them. I generally take pure coal ashes, and spread them about the roots of the tree, and them top-dress with ordinary manure, and spade in the spring.

Then there is another great difficulty with our trees. As I go through the country, and see how the farmers treat their trees, I don't wonder they do not grow. They set out their trees, and then raise grass and clover in the same field, and it is impossible for them to grow. The land should be ploughed and cultivated regularly for several years. In four or five years, after they get well grown, and the ground thoroughly cultivated, there is no necessity for having any crop upon it. After a few years' time, if you have nourished it enough, the land ought to be put down to grass, and allowed to lie for several years, before it is cultivated again.

I think the pear has not had so much attention paid to it sit should have had. It is a fruit every family likes, when they

can get it, and it is a fruit that now brings a good price in the market. I do not pretend to be a great fruit-grower, but I have found the pear one of the easiest things to raise, and it is the one that I have had the most success with. It now furnishes me, some seven or eight years after planting, a delicious crop, from August down to the present time; and they will run for a month or two longer.

There is one other thing to be said about the pear,—that it ripens best in the house. There is hardly a variety that can be ripened well upon the tree. The great advantage of this is, that you can pick them when they are comparatively green and hard. Take, for instance, the "Flemish Beauty"; that will bear picking earlier than almost any other. Put the fruit on your shelves, or into drawers, and it will ripen up beautifully, and have a fine flavor; and in that way, they ripen gradually, and continue along through several weeks; whereas, if they are left on the tree until they get dead ripe, as most people leave their pears, they all ripen at once, and there is a great loss.

Mr. Hubbard. With the address of this evening, the exercises of this convention will close. I wish to say, that it is customary for the Board to hold meetings in some part of the State once a year, for the interchange of ideas, and to stimulate to renewed energy all those interested in this great branch of industry. By invitation of one of your citizens, the Board have spent the last three days in this city, and before leaving it, I desire to offer this resolution:—

Resolved, That the thanks of the Board be tendered to the citizens of Fall River, and especially to Dr. Nathan Durfee, for their generosity, courtesy and hospitality to us on this occasion.

The resolution was passed unanimously.

Dr. Durfee. Permit me to say, sir, that the thanks of this community are due to the Board of Agriculture for the valuable and interesting information which has been imparted to them during the last three days. Especially, gentlemen of the Board, you have my thanks. I hope you will leave this place with the best wishes that our prosperity, of which you have had some evidence since you have been here, may be continued in the future.

The Board then adjourned.

# EVENING SESSION.

The Board met at  $7\frac{1}{2}$  P. M., to listen to the following lecture upon

# WHAT MODERN SOCIETY OWES TO SCIENCE.

By Dr. GEORGE B. LORING.

GENTLEMEN: - The annual meeting of the Massachusetts Board of Agriculture, for public lectures and discussions, is now about to close. It has been a session of unusual interest to all who are interested in agriculture, illustrating the deep desire of those who pursue this calling in large measure or in small, to ascertain the best laws by which they can be guided. The inquiries and deliberations of this Board mean an attempt to introduce the best theory and practice into an occupation, which, while lying at the foundation of all industry, has too generally been conducted without well defined rules, and has puzzled the scientific investigator by its successful crudities, more than the deepest problems have by their intricacy. The success of agriculture hitherto has been owing more to the fidelity of nature, and to her ready response to every reasonable call, than to fixed principles and accurate systems. The strong arm, the steady head, and the industrious purpose have prevailed. But when the worn and weary student has left his closet for the field, carrying with him none of those instinctive faculties which are born and cultivated beneath the open sky, he has been doomed to disappointment. When Burke with. drew from his brilliant and dazzling career, in which he had astonished even the genius of his time, and had secured for himself an immortal name among the greatest, and had retired to his farm at Beaconsfield, he found his eye too dull, and his thought too vague, and his judgment too narrow, for the sudden and unexpected emergencies which met him every day and everywhere on his farm. The weapons which he had used in his contests with his fellow-men, were useless when brought into a struggle with those obstacles which attend the changing seasons, and all the various conditions of soil and climate. His statesmanship was a brilliant success, his farming was a painful failure. And from his day to our own the disciplined mind has looked with envy upon the success which has attended the exercise of keen and quick perception, unerring judgment,

readiness in emergency, and steady common sense in the practical duties of agriculture.

Now, it is to remove this trouble, and to give the weak a fair chance with the strong, that careful agricultural investigation, and the application of science to the business of farming, have been so earnestly urged and so liberally provided for in our day. I cannot tell precisely how much benefit is to be derived from our labors. But I am sure that we may here learn of each other the laws by which agriculture can be conducted, and the principles which we may profitably apply to the land, and to the care of our flocks and herds. And when I call to mind the sure prosperity, the domestic happiness, the social repose which gather round a rural home here in New England, or which God intended should gather round such a home, I cannot believe that the tastes acquired in this assembly will be wasted, or that the knowledge acquired here will be useless. To the substantial prosperity which agriculture, even in its rudest forms, has always presented, and to the comfort and happiness which have always been accorded to the farmer's home, and which some of us have found there, are now added the great results which science lays at the feet of this as she does of every other pursuit in life, in our day. The problem which the student of agriculture is called upon to solve is how far he can apply scientific rules to the economy of the farm. and how largely the general prosperity of an agricultural community can be increased by the introduction of intellectual training into this especial business of life. How this problem will be solved I have no doubt. And feeling as I do the great obligations we are under to the scientific mind of our day, I shall leave the path which you have trod so well in your discussions, and ask you to consider the mighty efforts which man has made to solve the mysteries of nature for his elevation and practical benefit, and to render it possible to establish this very State Board of Agriculture, which three centuries ago would have been an impossibility.

For the practical farmer, we have discussed the various modes of cultivation, the management of animals on our farms, the application of chemistry to the improvement of the soil, and the various methods by which the prosperity of the calling can be secured. The subjects of theoretical and practical agri-

culture seem to be exhausted, and I dare not venture upon either a repetition of what has been said here, or upon still further investigation upon matters which have been subjected to your own exhaustive inquiries, and so remembering that it was the establishment of a Board of Agriculture in England which first introduced scientific principles into the practice of farming, and gave Sir Humphrey Davy his first opportunity for useful service in this direction, I propose to lay before you the steps by which man has arrived at the possibility of this connection between science and the practical affairs of life. The way has not been easy. Three centuries ago the educated mind of the world had rejected the very foundations of such a connection; and it is a matter of special interest to us to know the process by which this scientific possibility has been reached. Now, the great feature of our day is, that everywhere in cultivated and civilized society may be found an intense and serious effort to infuse the accuracy of scientific investigation into all practical affairs, and into the broad foundations of the Church and the State. Turn your eyes in any direction, and you will find the most powerful human intellect engaged in this labor.

The scientific period has arrived. The profound and masterly minds of the age-Humboldt just now gone, Agassiz resting for an hour only, as we trust, to return with renewed vigor to his imperial career in the realms of science, and their great investigating fraternity on both continents—have placed science at last in the divine regions of human genius, once occupied by the poets and historians, and orators and philosophers, who so long enjoyed undisputed sway as masters of human thought. The prediction made by Dr. Young, in the latter part of the last century,—a prediction then, and a familiar reality now, has been more than fulfilled. Remembering, as he did, that "the last two hundred years have done much more for the promotion of knowledge, than the two thousand years which preceded them," he says: "We have therefore the satisfaction of viewing the knowledge of nature not only in a state of advancement, but even advancing with increasing rapidity; and the universal diffusion of a taste for science appears to promise, that, as the number of its cultivators increases, new facts will be continually discovered, and those which are already known, will be better understood and more beneficially applied." And

he adds a word which I quote here for the encouragement of the Board of Agriculture, in that career of usefulness, which has thus far grown with its growth, and strengthened with its strength, and which may not pause until its cheering influence is felt throughout the entire domain of practical science. Royal Institution," he says, "with other societies of a similar nature, will have the merit of assisting in the dissemination of knowledge, and in the cultivation of a taste for its pursuit; and the advantages arising from the general introduction of philosophical studies, and from the adoption of the practical improvements depending on them, will amply repay the labors of those who have been active in the establishment and support of associations so truly laudable." Not, however, in the two centuries preceding this declaration, nor in the half century preceding, but in the short and eventful period which has followed, have the great achievements been made. The brilliant career of Buffon had just closed; but Laplace and Cuvier and Davy still lived and made promise of that wonderful march of science, which rose before the mind of Dr. Young, who might now be lost in admiration, before the imposing monument erected upon the foundations laid by his distinguished cotem-For now it would not be the labors of the great alone which he would be called upon to admire, but that "deliberate and concurring judgment of common minds," as Lord Bacon calls it, which has made science familiar to us all, and has filled the highways and by-ways of society with its life-giving fruits, and the human mind with its invigorating modes of thought.

And, now, surrounded as we are by all the blessings which science can bestow, and by all the promises which its enthusiasm can make, we cannot and should not forget the severe and desperate struggles it has been obliged to make in its upward progress. The cruel agony and torture which have visited the religious reformer; the poverty and contempt and despair which have made death welcome to so many of the sons of genius, whose immortality is now man's great inheritance; the hard and unequal warfare maintained by those who have fought for human freedom and equality and right, are familiar to us all. But not one such trial alone, but all and more have fallen upon, and harassed and persecuted those who have endeavored, by scientific research, to ameliorate the condition of mankind,

and to "look through nature up to nature's God." It is indeed difficult for us to realize, that against the theory that the earth is a terraqueous sphere, the whole power of the Christian Church should have armed itself, as late as the sixth century; and that nothing but the fact of circumnavigation, centuries later, dispersed the ecclesiastical forces. We turn with shame from the ignominy heaped upon Copernicus while living, and the insults to his ashes when dead; from the imprisonment, and torture, and fiery death of Bruno; because they proclaimed the great scientific fact, that the earth and planets revolve about the sun. Our hearts are moved with indignation and sorrow as we behold Galileo, driven from the pale of Christianity, denounced, tormented, forced in his old age to "abjure, curse and detest the error and heresy of the movement of the earth" -because he had worn out his great life in studying the glories of the heavens which God had made, and had taught the world that, in obedience to the divine harmony which set the constellations in their places, the earth did move, with its starry companions, around a common centre. We can hardly believe that the first great anatomist was exiled by the lovers of "sound learning," in one of the most enlightened and pious courts of Europe; and we hasten to forget that in our own day, in the name of religion, the best geologists, men of exemplary lives and an abiding faith, have been denounced as infidels and atheists, for having opened that volume on whose stony pages are written the succeeding chapters of creation, and the great laws of an all-wise Creator.

But this severe struggle between science and religious dogmatism, that strong fortress, behind whose frowning bastions the most fervid religious faith is prone to seek shelter and protection, is small when compared with the long and bitter contest which attended its emancipation from the tyranny of intellectual arrogance and pride. Contrary to that modern theory of science which would dispense, with a large and liberal hand, the bounties of sound learning to all men, "for the relief of man's estate," the ancient philosophers assumed that the object of all learning was to elevate man above this sublunary sphere, and to fill his mind with a lofty indifference to all his wants and necessities and comforts. "Philosophy," said Seneca in reply to Posidonius, who inadvertently complimented science, for

having discovered the principles of the arch, and the proper use of metals in the arts, - "Philosophy teaches us to be independent of all material substances, of all mechanical contrivances. The wise man lives according to nature. Instead of attempting to add to the physical comforts of his species, he regrets that he was not cast in that golden age when the human race had no protection against the cold but the skins of wild beasts, no screen from the sun but a cavern. To impute to such a man any share in the invention or improvement of a plough, a ship, or a mill, is an insult. In my own time, there have been inventions of this sort, - transparent windows, tubes for diffusing warmth equally through all parts of a building, shorthand, which has been carried to such perfection that a writer can keep pace with the most rapid speaker. But the inventing of such things is drudgery for the lowest slaves; philosophy lies deeper. It is not her office to teach men how to use their hands. The object of her lessons is to form the soul: Non est, inquam, instrumentorum ad usus necessarios opifex." "We shall next be told," exclaimed he, "that the first shoemaker was a philosopher." It has been well said that in the minds of such men as he: — "The business of a philosopher was to declaim in praise of poverty with two millions sterling out at usury; to meditate epigrammatic conceits about the evils of luxury, in gardens which moved the envy of sovereigns; to rant about liberty, while fawning on the insolent and pampered freedmen of a tyrant; to celebrate the divine beauty of virtue with the same pen which had just before written a defence of the murder of a mother by a son." But it was this style of thought and speculation which occupied the attention of the world for more than two thousand years. Socrates, Aristotle, Plato, Seneca, Cicero, all lived in an atmosphere of intellectual superiority, which enabled them to transmit to the student all the sublimity of thought, of which finite man is capable, all the moral elevation which the human heart can reach, all the religious confidence and trust which man can attain unaided by the light of revelation. It is not surprising that through so many ages they should have exercised supreme sovereignty in the kingdom of thought, and that great minds should have followed them, and little minds have been obedient to them. Nor, perhaps, is this a misfortune. For it were not easy to tell the intellectual effort which they have inspired, nor to count the scholars they have created, nor to value too highly the assurance which they have given to mankind, that the monuments of genius shall not decay, even though material grandeur shall perish and be buried beneath accumulating dust. are willing to walk hand in hand with them through those long ages, in the darkness of which their lights were not extinguished, and in the radiance of which it was their scholarship which prevailed. But we can imagine how our obligations to them would have been increased, had they and their followers substituted for wearying disputations, an encouraging word for natural philosophy as the foundation of useful discoveries, and not as a subject for fresh controversy and mere mental exercise. Nature and the generations of men can afford, I have no doubt, to wait for light; but still the hours are weary. And I knew no story in all the history of man's intellectual endeavor, sadder than that of the one great scientist of the middle ages, who, blinded by the lustre of scholasticism, and bound hand and foot by the rigors of ecclesiasticism, struggled in vain to emancipate practical science, and left behind him his own hints as a guide, and his own failure as a warning to his great namesake, who, coming after him, fell on more fortunate times. We are told that when Roger Bacon in 1234, studied mathematics, physics, and astronomy, and impoverished himself and his friends in purchasing the most costly instruments of his times, experimental philosophy was little in vogue, and his researches excited the hostility of his fellows. He was a devoted student of Aristotle and all his commentators in every language; but he found it impossible to carry the teachings of this great philosopher into practical science, at a time when all science was considered no better than heresy, and its results no better than magic. His writings were condemned; in his old age he was imprisoned; and he died in neglect. He was the great anticipator of science and the scientific age, which dawned upon the world three centuries after his death. He conceived the discovery of the telescope, and knew the composition of gunpowder, but was not permitted to witness the glorious revelations of the one, nor the irresistible force of the other. With his mind filled with visions of scientific grandeur, he could get but little farther than to declare that the causes of the intellectual torpor and ignorance

of the era in which helived, were too much blind confidence in authority, too much respect for custom, too much regard for popular prejudice, and too much conceited selfishness, which induces one to regard as dangerous and puerile whatever he does not know. But he "claimed for human reason the right to exercise a severe control over all the doctrines submitted to its approbation; he insists upon the dignity and the importance of the sciences, none of which are to be proscribed, and all of which are to be cultivated; and he establishes experience rather than reasoning as the proper method of research." And so this great man surrendered, leaving behind him only his appeal for intellectual progress, and preparing the way for a more defiant and revolutionary age of great discoveries, and popular assertion, and religious reform, and emancipated science. Three centuries passed away before his prophecies were fulfilled.

And now the great struggle commenced. Men still believed with Plato that science was a mere intellectual exercise and amusement; that the study of arithmetic was not intended for any practical service in life, but to habituate the mind to the contemplation of pure truth; that mathematics applied to any purpose of vulgar utility became a low craft, as he called it. fit only for carpenters and wheelwrights; and was no longer a noble science "leading men to the knowledge of abstract, essential, eternal truth; that the use of astronomy is not to add to the vulgar comforts of life, but to assist in raising the mind to the contemplation of things which are to be perceived by the pure intellect alone;" that the science of medicine should be applied only to those whose constitutions are good, and not to those who by inheritance, or excess, or exposure, or accident, have become so permanently enfeebled that their heads grow giddy and full when exerted in the studious contemplation of divine philosophy,—the remedy for feeble constitutions being death; that the science of legislation was based upon abstract virtue, and not upon that practical wisdom which would prevent and reform crime, and build up a state upon the principles of patriotism, and honesty, and courage, and honor, and furnish the highest faculties of man an opportunity to exert themselves "without being molested or insulted for it," as Gen. Grant said in his memorable conversation with Judge Hoar.

But this was not enough to satisfy the mind of Francis Bacon, who now assumed the leadership of the great scientific revolution, begun by him, and carried on in our day by the devotees of science everywhere. Entertaining profound respect and admiration for the great thinkers of ancient times, to whom I have alluded, and moving by his own natural forces along the same high plane of thought which they occupied, he stooped down and lifted into their august presence that useful and manly and homely attribute known as common sense. To be a philosopher meant with him to be the most useful man in the world; and so to him belongs the praise of having invented, methodized, and in a considerable degree perfected the general plan for the improvement of natural science by the only sure method of experiment. "Instead of hypotheses he asked for facts, gathered laboriously from the watch of nature's silent revolutions, or extorted skilfully by instruments and trials, and carried forward by careful generalizations from the world of the known to the unknown." He reasoned always from causes to effects; and so impatient was his mind of mere abstractions, that he never rested until he had brought his conclusions to some practical benefit. "He clearly, for instance, conceived of a thermometer; he instituted ingenious experiments on the compressibility of bodies, and on the density and weight of air; he suggested chemical processes; he suspected the law of universal attraction, afterwards demonstrated by Newton; he foresaw the true explication of the tides, and the cause of colors, which he ascribes to the manner in which bodies, owing to their different texture, reflect the rays of light." Ask a follower of Bacon, we are told, what the new philosophy as it was called in the time of Charles the Second, has effected for mankind, and his answer is ready: - "It has lengthened life; it has mitigated pain; it has extinguished diseases; it has increased the fertility of the soil; it has given new securities to the mariner; it has furnished new arms to the warrior; it has spanned great rivers and estuaries, with bridges of form unknown to our fathers; it has guided the thunderbolt innocuously from heaven to earth; it has lighted up the night with the splendor of the day; it has extended the range of human vision; it has multiplied the power of the human muscle; it has accelerated motion; it has annihilated distance; it has facilitated intercourse, correspondence, all friendly offices, all despatch of business; it has enabled man to descend to the depths of the sea, to soar into the air, to penetrate securely into the noxious recesses of the earth, to traverse the land in cars which whirl along without horses, and the ocean in ships which sail against the wind. These are but a part of its fruits, and of its first fruits. For it is a philosophy which never rests, which has never attained it, which is never perfect. Its law is progress. A point which yesterday was invisible is its goal to-day, and will be its starting-point to-morrow."

I have said that Lord Bacon endeavored to found his theory of philosophy on common sense;—I think he established the process by which he could reach the highest philosophical truth, upon the principles of common honesty. He proposed no new method of reasoning. The danger and weakness of syllogism were discovered long before he was born; the value of induction had been recognized by scholastic and scientist for centuries. But Bacon realized that a process of induction which failed to recognize all existing and possible facts, whether by accident or design, is as fatal to truth and sound philosophy as a syllogism which, unmindful of the fallacy of accidents, proves that we eat raw meat:-- "we buy raw meat in the market; what we buy in the market we eat: therefore we eat raw meat." He knew well that the inventor and discoverer who would arrive at any conclusion, valuable to himself and mankind, or the scientific explorer who would open new paths to useful knowledge, could not afford to shut his eyes to any facts or phenomena connected with the work upon which he was engaged. He felt that the recognition of error and failure is as important in all investigation as the recognition of truth. He turned the process of induction, therefore, from the scholastic business of making a good syllogism, perhaps of no value whatever, to the philosophical business of making a great discovery, or arriving at a great truth, invaluable to millions of the sons of men toiling to elevate themselves into the highest regions of civilization, with all their mortal necessities and their immortal aspirations. He was as impatient of fallacy, as he was of an accumulation of facts from which no principles could be deduced, and so he threw aside the books of the ancient schoolmen, because they taught nothing for the discovery of useful truth; and he burnt

the books of the ancient farmers, because they laid down no laws, and could therefore be of no use to any man. would have rejoiced in Franklin who caught, and Morse who used the lightning; in Brancas who discovered the power of steam, and Watt and Fulton who applied it; in James Smith, of Deanston, who invented tile drainage, and in John Johnston, of New York, who has employed it in a successful warfare against drought and flood, and the wheat-midge; in Count Rumford, who, having made a profound study of the theory of heat, set himself at work inventing fire-places, and grates, and ovens, and cooking-ranges, and founded a professorship of the application of science to the art of living; in Agassiz, who, having studied botany with Martius, and the embryonic development of animals with Dollinger, and the principles of classification with Oken, and zoölogy with Cuvier, joined hands with the farmers of Massachusetts in their investigations of soils, and crops, and animals, and taught the fish commissioners of Massachusetts how to stock the lakes and rivers of that industrious and enterprising Commonwealth! What an admirable professor in a school of technology Bacon would have made! What an efficient and accomplished president of a model agricultural college!

When Lord Bacon introduced the demands of common sense, and the principles of common honesty, into philosophical reasoning and investigation, when the student of nature adopted the motto of "Nullus in verba," and listened only to the result of experiments, or to the unerring mathematical deduction from those results, then the temple of science was raised with rapidity and triumph, by the accumulation of facts upon facts, which were firmly cemented by the strictest reasoning. And then the emancipation of science was achieved, and that struggle began which, in various forms, has continued to this day. And what an era of emancipation was that in which Bacon wrought! Everywhere the bonds which had bound man's soul seemed to be breaking. Between the birth and death of Bacon, America opened her arms, to receive the oppressed and persecuted. The Huguenots brought their protesting faith to our The Puritans, who had kindled and presouthern shores. served the "precious spark of liberty" in England, having sought shelter in vain in the Old World, braved the dangers of

an almost unknown sea, defying with their fervid hearts the freezing storms of winter, and the still more freezing storms of man's bigotry and persecution, and planted popular right and independent Christian worship in the New World, and gave an immortal soul to the empire of human equality on this continent. In the world of thought Shakspeare performed his divine and undying work. In the world of science, Harvey discovered the circulation of the blood; Drebel invented the thermometer; Torricelli invented the barometer; and Kepler erected as a monument to his genius, the "Astronomia nova celestis." It was the era of mental and moral protests and assertions, from which our own great privileges and opportunities have sprung.

From that period, the struggle which science had so long carried on against bigotry and intellectual arrogance, has been conducted, with a spirit of "audacity and sobriety" worthy of its great master, against the natural obstacles which lie in the way of finite man, in his endeavors to comprehend and employ the works of Infinite Wisdom. Once free, science has not been disheartened in her career of usefulness and honor. What an army of martyrs does she already present for the respect and admiration of mankind! Amidst the eternal snows of mountain heights, in the awful solitudes that surround the poles, in the smothering damps of unfathomable mines, scorched and stricken down on the burning sands of the desert, poisoned by miasmas, stifled by the fatal gases of the laboratory, wasted by long toil over the intricate and wonderful structure of the human body, the sons of science have bravely and nobly perished, that man might be brought into more intimate relations with that creation of which he has been made lord and master. Clothed now with the heroism and self-sacrifice which ennoble every great and good cause in which man can engage, science goes on from achievement to achievement, and will continue to go on until she reaches that boundary which is drawn between the human and the divine, and beyond which we "walk by faith and not by sight."

That this path lies before her, who can doubt? In the material world which lies all around us, in the earth on which we tread, and from which we draw our very existence, are constantly recurring phenomena, which have thus far seemed to

defy all human ingenuity to comprehend or control. But one by one they are explored, until what before was dark, seems illumined by a radiance almost divine. To all of us, for instance, has been brought home, the sad and sudden and distressing calamity, "the terror which walketh in darkness, and the destruction which wasteth at noon-day." Stricken homes and wasted fields are too familiar to all men. And man seems to have been powerless, thus far, in anticipating or preventing the ravages of contagious diseases and epidemics, or of destroying the swarms of destructive insects which invade his crops. And now Mr. Huxley steps forward and declares: "It is at present a well-established fact that certain diseases, both of plants and of animals, which have all the characters of contagious and infectious epidemics, are caused by minute organisms. The smut of wheat is a well-known instance of such a disease, and it cannot be doubted that the grape disease and the potato disease fall under the same category. Among animals, insects are wonderfully liable to the ravages of contagious and infectious diseases caused by microscopic fungi." Now, rejecting entirely the idea that Mr. Huxley could even "expect to be a witness of the evolution of living protoplasm from the not living matter,"-and accepting the theory that the origin of pestiferous particles, even, "is to be accounted for by the ordinary process of the generation of like from like,"-may we not believe with him that the nature and cause of many a scourge will be one day as thoroughly understood, "as is now the microscopic organism of Pèbrine, and that the long-suffered massacre of our innocents will come to an end?"

It is indeed a consolation to us to know that microscopic investigation has revealed the fact that many contagious diseases, which have been more destructive than war and famine, "are dependent for their existence and their propagation upon extremely small living solid particles," which, if they are parasites, "may be stamped out by destroying their germs." The destruction of these germs for the prevention of contagious diseases among men and domestic animals, and the employment of parasite germs for the destruction of insects injurious to vegetation, present to the practical scientist vast opportunities for useful exploration, and for actual service to mankind, which would be forever held in grateful remembrance. It is in such

service as this that science has achieved one of her most brilliant modern victories, for an account of which we are indebted to Mr. Huxley in his fascinating essay on the "Origin of Life." A peculiar epizoötic disease attacked the silkworms in France, about the year 1853, and threatened to destroy the great silk-producing industry of that country; involving a loss of thirty millions sterling to the silk-grower, and overwhelming with poverty and distress, a vast population employed in the most important manufacturing towns. After many unsuccessful investigations into the cause of this disease, M. Pasteur commenced a scientific exploration which determined the cause and provided the remedy also; and in the performance of which Pasteur added his name to the long list of those who have sacrificed themselves for the benefit of mankind. He discovered that this devastating disease "is the effect of the growth and multiplication of the panhistophyton in the silk-worm; that it is contagious and infectious, because the corpuscles of the panhistophyton pass away from the bodies of the diseased caterpillars, directly or indirectly, to the alimentary canal of healthy silk-worms in their neighborhood; that it is hereditary, because the corpuscles enter into the eggs while they are being formed, and consequently are carried with them when they are being laid; that it is an independent organism, which is no more generated by the silk-worm than the mistletoe is generated by the oak, or the apple-tree, on which it grows, though it may need the silk-worm for its development, in the same way as the mistletoe needs the tree." "Guided by this theory, he devised a method of extirpating the disease, which has proved to be completely successful, wherever it has been carried out."

Encouraged by this success of M. Pasteur, what may not the agriculturist expect from that alliance between himself and science which has been established during the last quarter of a century. Not that science will ever enable the farmer to shut his eyes to those great influences of nature, which the hand of man cannot reach, which no investigation can fathom, no human power guide; not that it will enable us to control the skies and the seasons; not that it will ever invade that unexplored region, where lie the strange forces which we all, philosopher and farmer alike, admire, obey, and leave with the good God who

made them; but that we may discover and remove the causes of disease in our soils and our animals; that we may make war upon the insects which ravage our fields and orchards, with some more potent agency than our hands and implements; that we may rescue our crops from those maladies which seem to put a limit to their very existence on the earth; and that both visible and microscopic organisms will one day be destroyed by antagonistic organisms controlled by man. That this is expecting too much of science, I cannot for a moment believe, supported as she may be by an accumulation of appropriate facts, and guided by accurate experiments.

And now I turn for a moment, with the deepest interest and the most profound respect to that struggle which science is making to enter the great domain of social and civil economy, and to establish fixed laws by which society and the State may be guided and elevated. Met, as she is, on the very boundary of this domain by every variety of human taste and necessity, by a great diversity of social and civil organization, by all the various opportunities and obligations which attend the geographical divisions, the mountains, and plains, and sea-coasts and islands, by a thousand industries new and old, and by all the established systems of society and State, every one of which virtue irradiates and vice deforms, her task becomes at once difficult, her temptations great, her dangers imminent. If there is any field in which she is to exercise the soberest judgment it is here. If there is any investigation in which facts are to be collected, arranged and weighed, it is where the prosperity, and happiness, and elevation of the human race are concerned. The soundest political philosopher is he who, gathering together all those causes of prosperity, general, diffused, and attended by popular virtue, which history provides, accepts the lesson which they teach, and promulgates the laws which they indicate; not he who starts with his theories, and bends to them his facts. That virtue and morality attend general prosperity, no one can deny; that vice waits upon poverty and idleness, is too true, and too sad; and recorded facts may teach us what has developed the one, and in consequence suppressed the other. If the record of executive power, here or elsewhere, points to encroaching dictation; if the history of legislative action is nothing more than the annals of corruption; if the chapter of civil

service is black with incompetency and dishonesty; it is indeed time that political science should organize a State more worthy of a free and enlightened people. If, under any system, the capital of our country has been scattered, and the labor of our country has been beggared and oppressed, let political science proclaim its reform at once. But let us, at any rate, look at things as they are.

For one I accept American facts as the foundation of American theories of public policy. A century of American nationality has its useful and encouraging lesson, of which we all may be proud, and from which we cannot turn in hopes of being taught a better. We have arrived at a system of government in which human equality is recognized; and in which industry, intelligence and morality are considered the attributes of good citizenship. We have reached a degree of prosperity, and wealth, and social comfort, and elasticity, and vigor, in which all may share, unknown in all its characteristics elsewhere on the face of the earth. Making this a standard of political science, I am ready to accept it, both as a guide for the future, and as the law of American nationality laid down by the fathers, who believed in American citizenship as an opportunity for human development, and in American industry as the vital force of our own country, an example for others to follow, and in no way to be guided and controlled by inferior, and as we think, less humane systems. We have learned much by our own experience as a nation; more than by the experience of others. Let this, then, be the foundation of American political science.

To that scientific thought which never tires in its explorations, and which may find its problems in every sphere in life, we submit our material welfare, relying upon the wisdom and integrity which now lie at the foundation of all its true success. And wherever the fraternity of philosophers inspired by this thought may turn their vision, whether to the heavens above, or the earth beneath or the waters under the earth, to our firesides or our public councils, there may they learn those laws of nature and of society, a knowledge of which may ennoble and purify the work committed by the Father to his children here below.

The Board then adjourned sine die.

ANNUAL REPORT OF THE COMMISSIONERS ON CONTA-GIOUS DISEASES AMONG CATTLE.

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts.

Complying with the requirements of the statute, the Commissioners on Contagious Diseases among Cattle herewith present their Annual Report.

At the time the report for 1870 was presented, a contagious disease known as epizoötic aphtha was prevailing quite extensively in the State, and causing much alarm to cattle owners and the public. All the then ascertained facts in the case and the measures which the Board had instituted to check its dissemination, and, if possible, eradicate it, were fully stated in that report. To meet the emergency and enable us to proceed in our work, the legislature, quite early in the session, made an appropriation of five thousand dollars. At that time circulars had been sent to all the cities and towns of the State. notifying their municipal officers of the existence of the disease in various sections; that the market yards of Brighton, Cambridge and Medford were unsafe localities; that it was forbidden to drive to those markets store cattle, milch cows or working oxen; and calling their special attention to the law which prescribed their duties in such an emergency.

To make our regulations effective and to assist the local authorities in this work, on the 12th of January Mr. Edward R. Craig, of Brighton, was appointed inspector of the cattle markets in the vicinity of Boston, and was instructed to stop all cattle being driven to or from those markets, except healthy beef cattle to be driven to places of slaughter. At the same time the several railroad corporations were forbidden to take upon their cars or to transport any but that class of cattle. Notwithstanding the thorough enforcement of these stringent regulations, the consumers of our cattle products were greatly alarmed for the public health, and the consumption of beef and milk decreased to such an extent as to disarrange and seriously affect the trade in those products. The measures of the Board were intended to and did protect the community from the consumption of unwholesome articles of food, and the alarm was groundless. Yet, to give the public confidence and relieve the

trade of its embarrassments, on the 19th of January, a statement of all the facts in the case was published, and a circular was sent to the towns from which milk was sent to market, directing the authorities to appoint inspectors in their several localities, with instructions to enforce the existing regulations and see that no milk was sold but that of perfectly healthy herds.

The disease was introduced here insidiously, and, by the movement of cattle in the usual course of the trade, it was widely disseminated before its nature or hardly its existence was known to the Commissioners or our stock owners. But the perfect isolation of all diseased herds, the prohibition to the driving of cattle in all infected neighborhoods, and the absolute interdiction of stores, milch cows and working oxen from the distributing markets, at once checked its progress, and the short time required in ordinary cases for its incubation, development and recovery, enabled us to control it in the locaties where it existed. But the eradication of the contagion, or the killing of the poisonous power of the virus in places infected by it, was a more important and difficult matter. It was found, during the winter, that the disease was in abeyance when the ground in infected inclosures was frozen, but the introduction of healthy cattle when the earth was softened by thawing, caused a new outbreak. This fact made it clearly apparent that if we would prevent this malady from becoming permanent here and annually inflicting the enormous losses it has occasioned in England and on the European Continent, some method must be devised to compel the perfect disinfection of all places where it had existed. To accomplish this object, on the 4th of March the Board prepared minute directions for the disposal and disinfection of everything which had come in contact with the sick animals or which could reasonably be supposed to be infected with the poison; which directions were sent to all our municipal authorities and the owners of our market yards, directing them to see that they were rigidly complied with, at the expense of the owners of such premises, and to report to this Board the accomplishment of the work on or before the 20th of April. At the same time notice of these measures was sent to all the railroad presidents of the State whose roads extended to the north and west, and they were required to disinfect thoroughly

all the cars which they used in the transportation of cattle, and all the places where they yarded and confined them.

During the winter, fat cattle from Albany and the West were allowed to be brought here and slaughtered to supply our markets, and no harm resulted therefrom; but on the arrival of warm weather, after much expense had been incurred in cleaning and disinfecting the cattle yards and drives of Brighton, it was found that cattle which were just developing the disease were being brought there from the vards at Albany. proved that the market places of Albany were poisoned and that all our labors and regulations would be of no avail unless the proprietors of those grounds could be induced to coöperate in the work by cleansing and purifying their premises. Communications were therefore sent to them stating the facts in the case, and on the 20th of March the Commissioners visited that locality and had a conference with them on the subject. As the result of that conference was not satisfactory and the evil still continued, on the 30th of that month our cattle dealers were notified of the danger, and advised to follow the example of the traders of Rhode Island, by completing arrangements for supplying themselves with cattle from Chicago via the Grand Trunk and Northern Railroads, thus avoiding the infection at Albany. At the same time communications were sent to the lessees of the Albany yards and the superintendent of the New York Central Railroad, making a renewed statement of the facts and giving information of the purpose of this Board to prohibit all cattle which should go into those yards from coming into Massachusetts unless they were thoroughly disinfected.

The result of these efforts was to awaken those parties to the importance of the matter and secure their hearty coöperation; and on the 24th of April a communication from them notified us that their premises had been cleaned and disinfected with carbolic acid, and were believed to be perfectly safe and harmless. Through the operation of these various measures, the new developments of the disease, which occurred on the approach of the warm season, materially subsided during the month of April, and at the time of the reception of the news of the purification of the market grounds of Albany, there were no known cases of it in the Commonwealth. At that time

returns had been received from most of the municipal authorities within whose limits the disease had existed, that infected places had been purified and everything supposed to be capable of spreading the distemper properly disposed of. The Board being satisfied of the fact, all restrictions against the free driving and transportation of all kinds of neat stock were removed the first of May, and this important branch of our trade and thrift at once and with confidence resumed its accustomed channels.

This disease has for many years ravaged and scourged several European countries, causing annually an enormous loss of property, and is raging there at the present time with great virulence; but not a case of it, to our knowledge, has occurred in this country since the 20th of last April, and it is to be hoped that it is effectually eradicated. If such shall prove to be the fact, the cost of carrying out the regulations of the Commissioners and the quite general interruption of the usual trade and profit of this business for a limited time, will be of no account when compared with the benefit of the results. It is a very noticeable and important fact that notwithstanding the continued prevalence of this contagion in England for many years, with the exception of a short period when the movement of cattle was prohibited in consequence of the existence of a more deadly plague, that it should apparently have been entirely suppressed here within six months of its first outbreak.

It is not impossible that our drier, warmer summer climate may have had some influence on its poisonous propagating and virulent properties, though we know of no record of cases abroad of greater malignity than some observed by us in the towns of Stow and Bolton. Whatever change, if any, climate may have produced in the type of the disease in other respects, its extremely contagious character was fully developed; and that we have been able to control and suppress it is undoubtedly owing to the fact that we have laws framed to meet such an emergency. The wisdom of these statutory enactments has been abundantly demonstrated at two important junctures: first, in 1:67, on the breaking out of the Spanish fever, and now, in the foot-and-mouth disease.

There is no reasonable doubt but that if such laws had existed here at the time the contagious pleuro-pneumonia was imported among our herds, it might have been quickly controlled, and hundreds of thousands of dollars saved to the State. The peculiar efficiency of our statutes consists in the complete control they give the officers of the law over all the cattle of the State, to prevent their being driven from place to place, to isolate them when suspected of contagious disease, to direct all municipal officers, and to punish all persons who shall neglect or refuse to comply with the regulations of the proper authorities. The laws referred to apply only to "contagious diseases among cattle." Their existence costs nothing when our herds are not exposed to danger, but they enable us to act with great efficiency and promptness whenever an emergency arises.

Almost simultaneously with the appearance of this disease in our State it broke out in Rhode Island, Connecticut and New The cattle commissioners of the former States were in constant communication with this Board so long as it was rife, and cooperated in the general measures for its suppression. By invitation of the board of New York, all the commissioners of the New England States met them in convention at Albany on the 8th of last February, "to concert measures for the eradication of the disease from the country." Much information was then obtained in relation to its introduction and dissemination in our respective States, but it was found that though New York, in consequence of its great distributing markets, was the most important point to attack the disease in the interest of the whole country; yet that State was entirely without laws for the suppression of contagious diseases among cattle, and its commissioners powerless to enforce any regulations for that purpose. In consequence of this, little was accomplished by the convention but to petition the legislature of that State to remedy the defect and ask the National Government to interdict cattle affected with this disease being brought into the country.

The legislature of New York failed to enact any statutes to meet the emergency, and the final extinction of the malady and the prevention of a new outbreak by disinfection, even in that State, is largely due to the measures of the commissioners of Massachusetts and Rhode Island, enforced by the very effective and stringent laws of these States.

Whatever of doubt and mystery was connected with the origin, importation and spread of epizoötic aphtha in the State, existed at the time our last report was made, investigation has completely dispelled. Without giving publicity to the innocent and unfortunate party who was the prime cause of its introduction, it is sufficient to say that it was imparted to a single herd in Canada by an importation from England in August, 1870; and almost before its nature and results were known, it spread through several townships. Thence, by the transit of stock, it was carried to Albany and several of the counties of Eastern New York and Western Connecticut. From Albany, also, it was transmitted to Brighton, thoroughly poisoning the yards in that place, and by distributing cattle from that point it was disseminated among our home stock over a wide extent of country in this and the adjoining State of Rhode Island.

To ascertain, if possible, the exact extent of its dissemination in this State, the probable losses it has occasioned, and to collect information which might be valuable in any similar emergency in the future, the Commissioners, on the 4th of March, sent a communication to the proper officers of every municipality in the State requiring them to report to this Board, answers to the following questions, viz. :-- "How many herds of cattle in your town or city have had the disease called epizoötic aphtha, or foot-and-mouth disease?" "How many single animals in those herds have escaped it?" "How many animals in all have had it?" "How many have died from it, either directly or indirectly?" "From what source did the cattle of your town obtain it?" "What is the estimated loss or damage to the stock of your town by the disease?" Through the negligence or indifference of the authorities after the subsidence of the disease, only partial returns have been received to the circulars sent out. From those received, however, and from the personal knowledge of the Commissioners, it is certain that it prevailed to a greater or less extent in at least seventy-five towns and cities of the State: that it visited more than two hundred herds, and the number of animals which had it was upwards of three thousand, and the number in those herds which wholly escaped it was three hundred or about one in ten. In the eastern part of the State every case was traced directly to Brighton or to cattle which came from thence, and in the western, to cattle from

Albany. The number which died with the disease was twenty-seven or about one in a hundred.

Owing to neglect in making the returns, the exact extent of the losses it has occasioned can only be approximately ascertained. But from the data received we feel justified in saying that the losses by injury to the infected stock, the total interruption of some branches of the cattle and milk trade, and the inability to employ oxen as working teams during the prevalence of the disease, must have occasioned an aggregate loss to the community of at least a hundred and fifty thousand dollars. The expenses incurred by the Commissioners during the year, as shown by the auditor's books, is three thousand one hundred and fifty-seven dollars and sixty-nine cents (\$3,157.69). A part of this sum, though shown on the books of this year, was expended in 1870, on the occasion of the appearance of a singular malady in southern Berkshire, supposed to be contagious. Of the appropriation made by the legislature this year, one thousand eight hundred and forty-two dollars and thirty-one cents (\$1,842.31) remain unexpended.

EPIZOOTIC APHTHA, EPIZOOTIC ECZEMA, FOOT AND MOUTH DISEASE

This disease first made its appearance in England in 1839, and it is generally believed to have been introduced from the Continent.

It has prevailed, more or less, since; yet while restrictions were in force (during the prevalence of rinderpest), preventing the moving and traffic in cattle, foot-and-mouth disease and pleuro-pneumonia were almost totally unheard of, isolated cases only occurring. Since the restrictions were removed, both diseases have prevailed and great losses have been sustained.

The first known outbreak in this State occurred at Brighton, among a lot of cattle which were being fattened; inability to eat, with a great flow of saliva, and lameness, were the symptoms. As they appeared to lose flesh rapidly, all were slaughtered and sent to market.

As the owners were ignorant of the nature of the disease, no precautions were taken. Other cattle were placed in the yards where the diseased had been kept, and sold to go to different places, carrying the malady which was contracted by being in those yards (in some cases but a few hours) wherever they went

#### SYMPTOMS.

The symptoms of foot-and-mouth disease are usually well marked,—so much so that mistakes rarely occur. Either the animal is observed to walk lame, in many instances before vesicles appear on the surface, or is unable to eat, though apparently anxious to do so. In some cases, both the mouth and the feet are affected from the earliest appearance of the disease. Upon examination of the mouth, vesicles will be found on the tongue, roof of the mouth and inside the lips, the saliva flowing freely.

Upon the feet, immediately above the hoofs, either between the digits or on the coronary surface, and the skin of the heels, vesicles appear, burst and discharge fœtid matter. In severe cases, the skin of the udder is affected; vesicles appearing, the gland itself becomes inflamed, abscesses form, and the animal is entirely ruined for milking purposes.

Occasionally, though rarely, cattle are found with both the mouth and feet in a diseased condition, which, to the ordinary observer, would appear to be affected with the disease in question. To the pathologist, it is distinctly different.

#### TREATMENT.

The more simple the treatment, in most cases, the better the result. For the mouth, a weak solution of alum, one part to twenty-four of water; for the feet, sulphate of copper (blue vitriol), one part to sixteen of water, and carbolic acid, largely diluted, applied alternately, and keeping the feet clean and dry, include all the treatment necessary in ordinary cases.

In answer to the question, Is there any liability to a recurrence of this disease? we quote from the "London Veterinarian," p. 203, 1861, the following:—

# "Prevalence of Eczema Epizoötica.

"During the last four weeks, the so-called 'mouth-and-foot disease' has prevailed to a very serious extent among the cows of many of the London dairies.

"Several animals have died from irritative fever, deep cellular abscesses, etc., but on the whole the deaths have not been very numerous. Great numbers, however, have been rendered useless for milking purposes, in consequence of severe attacks of mammitis,

both as concomitants and sequelse of the malady, thus taxing to the utmost the ability of the proprietors to furnish the required supply of milk to their customers.

"It is a fact, of great pathological value, that not only have secondary attacks occurred in several of the animals, but even tertiary in some few of them."

In the Second Annual Report of the State Board of Health, pp 426, et seq., will be found an interesting article, describing the symptoms and progress of the disease in three persons, acquired by partaking freely of milk drawn from cows affected with the disease. In conclusion, the writer says: "In accordance with the general law that animal poisons are destroyed when subjected to a very high temperature, we are justified in believing that the affection can never be communicated to man through the medium of the meat, provided it be thoroughly cooked, and, upon the same principle, the milk might be rendered innocuous by being boiled."

In the "Lancet," 1869, in an article headed "Foot-and-Mouth Disease in relation to the meat and milk supply," is the following: "Boiling the milk has been recommended for the purpose of preventing or lessening its injurious action; but, as a matter of fact, it may be stated that boiling does not alter the appearance of the morbid elements, nor does it arrest the movements of bacteria in the fluid."

#### CONTAGION.

That the disease is highly contagious does not admit of a doubt. Cattle have become infected by being driven over the highway where diseased oxen have travelled. A single animal, which was purchased at Brighton, has carried the disease and infected a herd of fifty head. As with all contagious diseases, individual cases occur which are insusceptible to infection. A large steer, recently slaughtered, weighing over two thousand pounds, was daily turned into the yard, and drank the water from the same trough where infected cattle were supplied with water; he escaped. Is the milk of cows affected with "footand-mouth disease" healthy? The answer is, emphatically, no. From the limited time the malady existed in this State, little is known of the effects of using the milk of diseased cows. Chemical analysis, however, sufficiently demonstrates the fact.

Mr. Henry W. Vaughn, the milk inspector of the city of Providence, who is a practical chemist, has analyzed samples of the milk of cows sick with the "foot-and-mouth disease," at different stages of the disease. The results of these analyses are very valuable in their relation to the character and progress of the disease, and are therefore deemed important to be given here.

The following table shows the results of four analyses. No. I. is the analysis of the milk from a cow in the worst stage of the disease. No. II. is milk from the same cow seven days later. No. III. is milk from a cow three weeks after the first symptoms of the disease were seen. No. IV. is the average results of the analysis of thirty samples of milk from healthy cows:—

	I.	11.	111.	IV.
Reaction,	Strongly acid.	Slightly acid.	Alkaline.	Alkaline.
	91.038	88.710	85.80	84.71
	8.962	11.290	14.70	15.29

## The solids consist of-

Caseine,	5.430	5.540	5.08	5.29
	2.30	2.88	4.70	4.96
	.542	2.13	4.18	4.28
	.69	.74	.75	.81

Mr. Vaughn says: "In sample No. I. the caseine was coagulated, occupying about fifty per cent. per volume. Under the microscope, there were but few fat globules, of irregular shape, and blood globules were disseminated through the mass."

The analysis of sample No. I. shows a very serious disorganization of the normal constituents of the milk. The sugar is converted to acid, the percentage of water is largely increased, the proportion of fats is much diminished, while the appearance of blood globules indicates serious trouble.\*

<sup>•</sup> Report of Rhode Island Cattle Commissioners.

During the prevalence of the contagion, applications were frequently made to the Commissioners for remuneration by the State for the various losses which individuals had suffered by it, showing a great misapprehension in the community respecting the powers and duties of the Board, and the purpose for which it is appointed. The law creating and defining the duties of the "Commissioners on Contagious Diseases among Cattle," was clearly intended to guard the community from the spread of contagious disease, and ample power was given the Board, so that in extreme cases, if it was necessary, in order to stop contagion, healthy but infected cattle might be slaughtered at the expense of the State; but not to pay for cattle dying of disease, the expenses of their sickness, or the incidental losses it might occasion. Entertaining this opinion, the Commissioners have refused any remuneration to sufferers, though their losses have been disastrous. With the exception of the disease referred to, the herds of the Commonwealth have, during the year, been healthy, and our great interests in cattle and their products have been prosperous.

LEVI STOCKBRIDGE, E. F. THAYER, H. W. JORDAN,

Commissioners on Contagious Diseases among Cattle.

BOSTON, Dec. 29, 1871.

# ANNUAL MEETING OF THE BOARD.

The Board met at the office of the Secretary in Boston, on Monday, the 5th of February, at twelve o'clock, His Excellency, Gov. WASHBURN, in the chair.

Present—Messrs. Allis, Baker, Bradford, Bucklin, Davis, Fearing, Goodman, Hubbard, Hyde, Johnson, Knowlton, Ladd, Loring, Moore, Peck, Saltonstall, Slade, Stockbridge, Stone, Ward, Washburn and Wilder.

The records of the last annual meeting were read and accepted.

Messrs. Wilder, Saltonstall and Goodman were appointed a committee upon the order of business.

On motion of Mr. Davis it was

Voted, That upon all hearings upon applications for a change of time for holding Annual Fairs of an Agricultural Society,

the committee shall notify the delegates of all societies in the county, and of other societies whose fair is held within twenty miles.

The committee on the order of business then submitted the following

#### REPORT:

- 1st. Reports of Delegates to county exhibitions.
- 2d. Reports of Committees on subjects assigned for essays.
- 3d. Report of the Committee on the Agricultural College.
- 4th. Miscellaneous Business.
- 5th. Appointment of Delegates.

The sessions to begin at 10 o'clock, A. M. of each day.

The Committee also suggest that the committees on the selection of subjects for essays and on the annual country meeting be appointed on Wednesday morning.

(Signed)

MARSHALL P. WILDER. LEVERETT SALTONSTALL. R. GOODMAN.

The report was accepted.

The reports of delegates being in order, Mr. Stone submitted a report upon the Middlesex Society; Mr. Allis upon the Worcester; Mr. Hubbard upon the Worcester North-west; Mr. Vincent (read by the Secretary) upon the Highland; Mr. Allis upon the Hampden; Mr. Johnson upon the Worcester North; Mr. Ward upon the Bristol Central; and Mr. Hyde upon the Hampshire.

Mr. Fearing also made a highly interesting verbal statement upon the exhibition of the Hingham Society.

After the transaction of some further business the Board adjourned.

## SECOND DAY.

The Board met at ten o'clock, A. M., on Tuesday, His Excellency, Gov. WASHBURN, in the chair.

Present—Messrs. Allis, Baker, Birnie, Boise, Bradford, Bucklin, Converse, Davis, Ellsworth, Fay, Fearing, Goodman, Hubbard, Hyde, Johnson, Knowlton, Ladd, Loring, Moore, Peck, Phinney, Plunkett, Slade, Stone, Stockbridge, Ward, Washburn and Wilder.

Reports of delegates being in order, Mr. Ellsworth presented a report upon the Essex Society; Mr. Peck upon the Middlesex North; Mr. Bucklin upon the Worcester South-east; Mr. Goodman upon the Bristol; Mr. Knowlton upon the Hampshire, Franklin and Hampden; Mr. Brown upon the Hampden East; Mr. Ladd upon the Berkshire; Mr. Converse upon the Houstonic; Mr. Baker upon the Union; Mr. Stockbridge upon the Franklin; Mr. Slade upon the Hoosac Valley; Mr. Fay upon the Norfolk; Mr. Birnie upon the Plymouth; Mr. Boise upon the Marshfield and Mr. Phinney upon the Nantucket.

Mr. Hubbard was appointed a committee on the credentials of new members.

Mr. Ellsworth then submitted the following essay upon the

## MANAGEMENT OF THE DAIRY.

Of the different branches of farming, the dairy unquestionably ranks first. The same might have been said of it fifty years ago. We can hardly understand as we look over the State and observe the many deserted farms, and barren acres, how this interest, to-day, holds a place second to none in the long list of agricultural pursuits. In the time of our fathers, our farms were rich in natural fertility, and supported large herds without resorting to artificial helps, and yet, although our lands have depreciated in agricultural value, dairy farming has not only held its place as first, but has actually increased in extent and importance nearly twofold since those days. Such is the fact, however, astonishing as it may seem, and of the many reasons to which to ascribe the remarkable growth, there are at least three prominent ones.

1st. The improvement in dairy stock and the management of the same. This is a more important reason than we can realize. It has affected the whole dairying interest by giving us better machines, so to speak, with which to work, and by throwing around this pursuit a sort of fascination, which has led the dairyman to take a deeper interest in his calling. Instead now of the large herds of scrubby native stock without pedigree, and whose physical qualities could never be predetermined, we have our grades and pure-bred cattle with a well-defined pedigree, showing their descent from animals whose characteristics were marked and well developed. What would the dairyman

do without his carefully bred animals, without his Shorthorns, or grade Shorthorns, his Ayrshires, Devons or Jerseys, or crosses effected between these breeds? Without them, however hard he might labor, we fear his efforts as a dairyman, would be attended with little success.

In relation to the management of dairy stock, that indeed has undergone a decided change. The farmer of to-day, who is feeding his herds as his fathers did, is either an unmitigated conservative, ignoring modern discoveries, or else is an inactive, shiftless man, with hardly sufficient life and enterprise to care for his faithful herds, and much less to make improvement in his treatment of them, and so not only doing a valuable service to them, but materially benefiting himself. The management of dairy stock has been so much improved within the last twenty-five years, that it holds an important place in its effect on the development of dairy industry in this country; in fact, we doubt if there has been another influence more potent in its growth than that of the improved management of the dairy cow.

2d. The manufacture and marketing of dairy products as influencing the growth of the dairy. The improved methods of manufacturing butter and cheese, and the facts and discoveries wrought out in relation to the same, have all played their special parts. The introduction of the cheese factory, one of the greatest blessings to the farmer and his family, has no doubt greatly influenced the development of this branch of dairy farming, while the improved methods of gathering cream and churning the same, in a measure lightening the labor of the dairyman and increasing his profits, have done much to advance the growth of this department of the dairy. the facilities of marketing dairy products, only a word need be They, of course, have held the same relation to the development of this interest as to every other interest in the country. The great facilities of travel, coming as they do to almost every farmer's door, have affected this calling as much as any other in the land.

3d. The last and most important cause to which we credit the rapid development of the dairying interest in this State, is the increase of population, which has created a greater demand for dairy products. If the demand for these increase twofold, the supply will increase in the same ratio. Although the State does not furnish the whole of this supply, and probably never will, as other States are constantly sending in, still a growth in population will produce a corresponding growth in dairy farming. More especially, however, will an increase in the population affect that department of the dairy known as milk-farming. Nearly all of our large farms in the vicinity of large towns and cities have already been converted into milk farms, and eventually, we believe, the principal dairy farming in this State will be that of producing milk for home consumption, and consequently, will be carried on in the neighborhood of chief centres of business.

We come now to speak of the cow herself. In this important branch of farming she plays the most prominent part, and too much cannot be said in her praise. Is there a more gratifying sight in our daily life than the dreamy, good-natured cov,perhaps the property of some poor family who are dependent, in part, upon her for their support,-after she has completed her day's work and is quietly waiting for some one to draw from her a bountiful supply of one of the richest and purest delicacies ever furnished to man? Is there any animal that commands our respect to a higher degree or to which we should feel more grateful? We read that the ancient Egyptians used to worship the bull, but if our devotions are to be paid to any brute, is not the cow more deserving of this tribute? The bull was reverenced as a symbol of productiveness, yet how much more should the cow be reverenced, for she not only produces, but rears her own young, and at the same time helps to rear the young of the human family. She gives us veal, milk, butter and cheese, and finally yields up her own body for beck The number of different varieties of food for our nourishment and gratification, that milk enters into, as an essential part, it would be difficult to determine. It has been found by careful scientific research, that one pound of cheese is equal, as an article of diet, to two pounds of beef; and an experiment made in France about ten years ago, proved that it cost no more to produce three pounds of cheese, than one pound of beef. But whether this is so or not, there is no doubt that the cow is the most useful to man of all the domestic animals. Therefore, the selecting, raising, managing and feeding of the dairy cov,

as well as the best methods of disposing of her products, are of no small importance to the farmers of Massachusetts.

### MANAGEMENT OF THE DAIRY.

We do not propose to speak of the different breeds of cows, nor to select any one as best adapted for a special purpose. There are, at least, half a dozen different breeds in the State, some of which are specially adapted to the wants of the farmer in one locality, while others would be equally good and perhaps better in other sections.

The good qualities of the different breeds have been so often discussed in the agricultural papers and elsewhere, that we presume farmers generally have selected such as best suit them for that branch of dairy farming which they wish to follow. But the general management of the different dairies is or should be nearly the same in all. We believe there are very many intelligent farmers in this State who do not manage their dairies, as to raising, feeding, &c., as they should. Much depends upon the management of the young heifer whether she makes a good or a fair dairy cow. A heifer can, by careful treatment, be taught to be a good milker.

We are told that the cow, in its natural or wild state, barely gives milk enough to raise her young; and there are certain herds in this country where size and form are especially sought for, that will do but little more; while at the present time, there are cows in our midst that give twenty to twenty-four quarts per day for a considerable time during the best of the season. But this improvement is brought about only by skilful management.

To raise a good cow we should first select a calf from a well-bred mother that is fully matured, say from three to nine years old, and known to be a good milker. The father should be thoroughbred, not less than two years old, and descended from a good milking family. We should prefer the calf to be an early one, not later than March, and if earlier it is better. By being early the calf gets a good start in the spring, and will, if well cared for, come to the barn in the fall, large, strong and healthy, and will usually come in when two years old and make a good-sized cow.

There is nothing so good for the calf as new milk, either

taken directly from the cow, or drunk. But few farmers can, however, afford to bring up a calf wholly on new milk.

We have practised raising calves by allowing them to suck the mother about four days, then teaching them to drink, which is easily done, with new milk. Let the calf lose one meal from the cow, and it will almost invariably drink, when the milk is offered. It should have new milk until fifteen days old, then this can be mixed with an equal amount of skimmed milk or oatmeal porridge. Care should be taken not to feed too much; four quarts is enough to give at once. We should try, also, to teach it to eat early-cut hay, roots, oats and shorts. In this manner the calf will grow straight and healthy. It is wrong, however, to allow a calf to drink a large quantity at a time of anything. Calves can be raised upon hay-tea, porridge, &c., without any milk, but we think that if a farmer is so situated that he cannot afford a calf new milk one week, then one-half skim milk until it has a stomach sufficiently strong to digest more solid food, he had better buy his cows rather than raise them. A heifer should be kept thriving until she comes to milk, and if possible she should drop her first calf while in the barn, or just before going to grass, as there will be less danger of having trouble with the udder. After well in milk, she should be liberally fed, carefully and regularly milked until near her next calving time. By such treatment, if she is of good blood, she will generally make a good cow and hold out well. Heilers should be frequently handled and petted from calves; then they will be more easily handled for milking.

The milch cow should be gently and carefully treated, and should have her wants as fully supplied as may be at all times of the year. Although she should be allowed to go to the ground as soon as practicable in the spring, yet she should not be permitted to run upon the summer pastures until they can afford her a good supply of food. It is poor economy to allow herds to roam all over the pastures clipping the young and tender grasses before they yield much nutriment.

When the change is made from hay to grass it should be done carefully and gradually; the cows should have a foddering of the best hay twice a day as long as they will eat it; if extra feed has been given it may now be discontinued.

In order to keep up a good flow of milk a constant supply of

food suited to the wants of the cow must be given, and care must be taken to provide against the falling off of this supply as the pastures dry up. It requires a certain amount of food to support nature. All above this generally goes to make milk, or beef if the animal is not in milk. The cow, therefore, should not be allowed to shrink her milk early in the season for the lack of a sufficient amount of food to make it. What that supply shall be every farmer has a preference. I plant southern and sweet corn and cabbages as well as sow millet, grain and flat turnips, endeavoring to have them succeed each other as they are required by the cows. I have never, except in two instances, during the past fifteen years, put in a soiling crop, without having a special call for it before winter. These socalled green crops, I always feed in the barn, with the exception of the flat turnips which I pull and strew on the grass ground, immediately after milking. Turnips fed in this way will impart no unpleasant flavor to the milk or butter.

The most satisfactory way of salting cows, with me, is to give about a dessert spoonful each morning, while giving green or summer feed. This amount they will always eat with good relish. In winter, instead of salt alone, I feed twice a week with salt, plaster and wood ashes mixed in equal parts, a table-spoonful at least.

#### MILKING.

It is of the greatest importance to the dairyman that the milking should be done in a proper manner and at regular intervals. If the cow is kindly treated she will give down her milk with pleasure; but if roughly used she will hold up some part of it, and the quantity will gradually diminish till it will hardly pay for milking. Everything should therefore be calm and quiet about the milking stable. The milker should sit down to the cow with the pail in his left hand; commence brushing the udder and teats with the right, carefully for a few seconds. In this way the udder and teats will become clean, and the cow will be ready to give down her milk and no time will be lost. Then commence the operation by shutting the upper part of the hand close to the udder, gradually closing it towards the end of the teats; repeating without any twitching or jerking until clean.

In summer nights the cows may be stabled or allowed to run

in the pasture according to the choice of the dairyman. We choose, however, to let them run on the same pasture night and day, changing pastures often. When the nights become cool, they should be stabled and fed regularly. The stable is best situated on the south side of the barn, well lighted, and with suitable means for ventilation. We prefer to fasten milch cows in stanchions, for various reasons: it is quicker, neater and safer, and when they are accustomed to lie in them, they appear perfectly comfortable. Calves and heifers should be fastened with chains, because, when their horns are soft, the stanchion will often cause them to grow crooked. The floor planks on which the cow lies should be of such a length that when she's down her whole weight will rest upon the platform. platform, for a large-sized cow, should be four feet nine inches long, but slightly inclined, and raised six inches above the trench. When fastened with stanchions upon a raised platform of suitable length, it is very little trouble to keep animals dean. If one prefers to fasten with chains, the floor must be longer in order to keep them clean, as they change their position so often. For bedding we should recommend the free use of sand when it can be obtained. Experience has shown that it rids cattle of vermin, and moreover it is of great value in the manure pile, especially for a clayey soil.

In relation to the construction of the manger it may be proper to say a few words. The general rule for our guidance, however, in its construction, should be to promote the comfort of the cow in eating from it. To accomplish this the floor should be raised about two inches above the platform on which the cow stands, thus preventing all reaching for food, and from slipping and falling upon the knees.

### WINTER FEEDING.

Having considered what we think to be the proper method of raising the cow from the calf, and of tying her up, and having spoken of the floor upon which she stands, and the manger from which she eats, we properly come now to consider her food and the manner of feeding it. It is not so much the kind of food, or how we prepare it, as the method of giving it, that we are to consider. In regard to the preparation, however, some recommend very highly steamed feed, and claim it to be a great

saving of fodder; others give cut feed with equal satisfaction; while still others claim that the common dried fodder properly fed is the most economical when the cost of steaming or cutting is taken into account. Whether the steaming of food is a saving or not, we feel sure that it cannot come into general use on account of the expense of getting and arranging the necessary fixtures. The same in regard to expense is true in relation to the cutting and mixing of feed for stock. Although but a few fixtures are required, yet it takes much labor; the labor we employ is generally of so poor a quality and yet so expensive to hire, that the less we needlessly employ, the more successful will be our farm operations. I have formerly given cut feed to considerable extent, and have concluded that it is considered a saving because it is fed in less quantities and with more regularity. Now, when a farmer is convinced that he can make a saving without extra cost by adopting a different method from the one he has generally followed, he is not very slow to try the experiment.

The course which I pursue in feeding I adopted twelve years ago. It has been styled the "Barre system," and the credit of originating it has been given to me. I liked the system so well, and my stock did so much better than before, that I began to tell my neighbors about it, and the per cent. of fodder which I was confident I had saved. Some hardly believed me; but as hay was very high that season, they began to try it, and thus it was adopted. I remember, about ten years ago, of taking a long ride with one who was then, as he is now, a member of this Board; and as we drove slowly along through the mud, I told him how I fed my cows. The system seemed to strike him favorably, for he not only immediately adopted it himself, but from that time, whenever and wherever he has spoken about feeding stock, he has recommended this system which I then related to him.

The system of winter feeding, as we have practised it, is as follows: The poorest quality of fodder that I wish to feed is given first, at the beginning of each meal, and in the morning, while the cows are eating this first foddering, I commence to milk. By the time they have this two-thirds eaten, another foddering is given them of a better quality; and then the third, which consists of the best hay which I intend to feed, is given

as before, or just previous to the finishing of the second foddering. By feeding in this way the cows are kept constantly eating, and will consume all that is placed before them, leaving nothing eatable in their manger. I then sweep out and am ready to feed roots, meal, &c., which are given immediately. Then commence to water by letting out only a few at a time and seeing that all have a chance to drink,—thus allowing little or no time between eating and drinking. The stable is then cleaned, and they are returned as soon as they have drunk. They have nothing more to eat until their afternoon meal, which is commenced at about half-past two o'clock, by feeding, watering, &c., the same as in the morning, with the exception of the roots and meal, which are all given at one time, and that in the morning. I milk at night after watering. Nothing is fed after watering, either morning or evening.

By this method the cow has had two good meals, has drunk twice, and has at least sixteen hours out of the twenty-four in which to rest and quietly chew her cud. A stock of cows thus tended will eat one-half coarse or poor quality of fodder, with the rest of good hay and a very little grain, and keep in good health and flesh, giving at the same time a good flow of milk. When I have plenty of hay and rowen, I feed very little grain, but now, since we have had short crops of hay, I use more meal. For a milch cow I feed one quart of Indian and one quart of cotton-seed meal and two quarts of shorts, with six of sliced roots. This will make a good flow of milk without doing injury in any manner to the cow. But if my object is to make beef and milk at the same time, I increase the Indian meal according to the size and capacity of the cow.

When we tell a farmer, who feeds three meals a day, that his cows would do better with but two, he can hardly believe it, especially when he eats three times himself. Judging of the wants of a cow from our own, we can readily see why she appears to want three meals a day after she has acquired the habit of eating her daily food at three different times. Now if we are convinced that this is a wrong habit, and feel sure that we know a better one, should not this better one be substituted? A cow will drink more heartily as soon as she has eaten a full meal of dry fodder than she will after she has begun to chew her cud. After a cow has finished eating, it is natural for her to chew

over this food, to extract the nutriment from it. It is undoubtedly right that she should have sufficient time to do this. If three hours is enough to accomplish this, she should then be fed again; but if not, why not wait until she has finished? A well-fed cow will chew her cud continually for six hours if she is not molested; but should she be offered a good foddering of hay in three hours from the time she was last fed, she will eat it.

The point for us to settle here is, whether the cow is better off for being fed in three hours, or to wait six, until she has finished chewing her cud, before she is fed again. I believe that she is better off not to have any food offered her for six hours, or between the morning and afternoon meals. If a man, now feeding a cow six pounds of the best hay and two quarts of meal three times a day in any form, will try feeding the same amount in two meals, or nine pounds of hay and three quarts of meal dry, at a time, giving what water the cow will drink directly after eating, continuing the trial for two weeks, he will be able to decide for himself whether two meals is as good or better for the cow than three.

A long experience, with a careful study of the wants and habits of the dairy cow, has convinced me that she will consume the same amount of fodder in less time, will drink more, and be better filled up, keep in better condition, with less care, and give more milk, than when fed three times.

If I had but one, or only a few cows, I would give all I wished to feed at one meal or one foddering, but, for a large herd, I should prefer to give this meal in three fodderings. The length of time required to feed varies according to the kind of food we are giving. When it is all good hay, it will be eaten in less time than when a part is of a coarse or poor quality, but in either case the cow will eat with a good appetite. As a rule, I would say, two hours is sufficient for one meal, or two and a half in the morning and one and a half in the evening. More time is required in the morning, as the roots and meal are fed at this time. My reason for feeding these in the morning is because there is a much longer time between the evening and morning meals, and the cow is therefore in a better condition to eat a richer and heartier meal.

If a cow, after becoming dry, loses flesh, as she sometimes does before calving, especially when the calf is a male, and the

cow a little thin, I feed one or two quarts of meal a day. When there is a great draft upon the system, as in the case above meationed, oatmeal, I find, is a great help in restoring it.

The idea that a cow needs only two meals a day during the winter season, or as long as she is kept upon hay or other dried fodder, notwithstanding the fact that she will eat much oftener when obtaining her living from the pasture, may appear, to the casual observer, to be contradictory to itself; but, on a closer investigation, we shall notice a rational, and, I believe, satisfactory, reason for it. Of all the elements of which grass is composed, by far the larger part is water, which must render it much more bulky than an equal amount of hay, and for this reason more is required to supply the wants of the system. During the season, therefore, when the cow must live by her own exertions, she must labor most of the time to obtain the requisite amount of nourishment, which she is not required to do while in the barn. We must not forget, also, that pastures, in general, are kept down so close, during the greater part of the summer, that only by continual labor can her wants be satisfied.

#### ROOTS.

It seems to me that we can hardly call a man an intelligent farmer, or a good dairyman, who does not raise an abundant supply of the different varieties of roots, for his cows during the winter months, when they must live for the most part upon dry food. We all know and fully realize, how important vegetables are, as a part of our own diet, and is not this equally true when applied to the condition of our animals?

#### CARDING.

This operation is a great treat to a cow, and as much so, perhaps, to every dairyman who enjoys seeing a dumb animal happy, while no one can help noticing how impatient each cow becomes in waiting for her turn. This should not be neglected for a single day, while the herd is confined in the baru. This duty is more often overlooked by the farmer than any other.

### DRYING OFF A COW.

The manner of drying off a cow so that her udder may remain uninjured, and in suitable condition to yield a good sup-

ply in the future, is of great importance. A great milker is more often troubled from this cause than an ordinary one. Drying may be most successfully done when the cow is within about nine weeks of calving, as before this time she gives too much milk; while later than this she has commenced to increase her flow to supply the calf. When I commence to dry off a cow I give a poorer milk-producing food, as well as a scanty allowance, until the flow of milk is checked, which generally requires about five days. The udder must be watched closely and should the milk become thick, or clotted, it must be frequently removed, but as soon as it becomes thin and watery in all the teats, all is well, thus leaving about five weeks in which to recruit her system.

## CARE DURING TIME OF CALVING.

The most watchful care is required during time of calving, while experience and judgment are of great importance. More trouble is to be feared from an extra good cow than from an ordinary one. When a cow is expected to calve she should be placed in a comfortable stable, well protected against drafts of air, with plenty of bedding, and the herdsman should know her exact condition every hour until she calves. Soon after calving we give a pailful of water slightly warm, into which a pint of rye meal has been stirred, water often for the first twenty-four hours, warm as at first, but never give more than a pailful at a time. Only a small amount of fedder should be given during the first twenty-four hours and no grain in any form for at least four days or a week. A few roots, however, will be beneficial. The cow and calf may be kept together, for a day or When the calf is suckled, it should be changed from one teat to the other, as young calves will hang to one teat altogether, sucking and bunting so hard as to injure the udder, and in this way one teat will often be injured by the calf, thus lessening the flow of milk in that quarter of the udder. If at the end of one week all appears to be well, we gradually increase her feed. Trouble is easily avoided by watchfulness and care in season. When a cow has a swelled udder with high fever in it I don't allow the calf to suck, but keep her in the stable, giving her only warm drink, feed sparingly, bathe the udder often, with quite warm soap suds, and rub carefully with the hand

until dry, then apply lard, rubbing very gently. I have never failed of success, even in the most extreme cases. The above applies, more especially, to what we call great milkers as with ordinary cows, we seldom have any trouble.

### PRODUCTS OF THE COW.

There is probably no way to dispose of milk so profitably, provided a fair price can be obtained for it, or exchange this product of the cow so quickly into ready money, as by selling it by the can. By this method of disposing of milk it is unnecessary to keep swine. Next to selling of the milk the making of cheese by the factory system, may be called the most desirable, all things considered. While the selling of milk may be called the easiest, the making of butter certainly requires the most attention and care. We cannot expect a prime article, unless the closest attention, together with good judgment and plenty of work, is bestowed upon it. While the principle that the demand governs the supply, is true of nearly all branches of trade, we can hardly apply it to that in choice butter. For such, the demand is always greater than the supply, and is ever on the increase. We cannot, therefore, afford to make poor butter. The market calls for nothing but the choicest, and such alone we must make, if we would follow this branch of dairying with success. In glancing over the columns of our agricultural weeklies, how often do we notice an inquir amounting to this: Why is there so much poor butter and so little prime or "gilt-edged" in the market? Why is it that so few dairywomen can make that quality so much demanded? This they call a mystery. It is no mystery to me. The quality has been sacrificed, for the most part, by want of care and watchfulness. Not one of the many neat and careful processes can be neglected nor even slighted. Every one must be done at the proper time.

I have noticed many articles upon the general subject of butter making. One, perhaps, upon the temperature of the milk room; another as to the temperature of the cream, for churning; and others upon the amount of milk required to make a pound of butter. Some give the amount as eight quarts, others as nine, and some go as high as sixteen, but all fail to state whether this is a general average of their whole dairy,

or the milk of a particular cow; whether all the milk is taken or only the last strippings. Such experiments can be but little relied upon. We can arrive at no satisfactory result unless the tests are made with care, and when reported, it should be done minutely and correctly.

For many years I have followed cheese making, considering it the best way to dispose of my milk, but during the past year I have turned my attention to the making of butter, and, during every month, I have given my personal attention, to the making of many careful trials and noting minutely the results. Although it is easier to make butter in some parts of the year than in others, yet it is generally thought that a prime article cannot be made in winter. I have satisfactorily proved that this is not so, provided the following conditions are complied with: 1st, We must have good butter making cows. 2d, they must be fed upon such food as shall enable them to produce a rich quality of milk. 3d, this milk must be set, and kept at the right temperature, and skimmed at the proper time. 4th, the cream must be churned when new, not forgetting also that for churning a certain temperature is required to obtain the best butter.

To follow butter making successfully through the entire summer, requires the utmost skill and judgment. Where this branch of dairying is to be followed, a proper place to set the milk should be provided. This room may be situated above ground, and having, if possible, three of its sides exposed to the air, in order that we may the better control the heat and cold, by proper means of ventilation. As a matter of course everything must be kept clean and neat about the surroundings. It should be double boarded, and well plastered within, in order that sudden changes in the weather may not be as quickly communicated to the milk. A piazza of sufficient depth, to keep the sun from striking the sides of the building, would be a desirable addition. With every precaution which I can adopt, I have been unable, in hot days, to keep the milk sweet long enough to obtain all the cream.

In order to overcome this difficulty "milk coolers" of different styles have been devised. At the New York State Fair, which I had the pleasure of attending last autumn, I noticed several of these on exhibition, accompanying each of which were very favorable recommendations from those who had used them, in the butter dairies of that State.

From my own experience I can say nothing as to their practical value, but it is my intention to test their merits for myself, during the coming season.

The only thought of those people who make only a small amount of butter, as well as of those who make it but a part of the year, seems to be to provide the coolest possible place for their milk. This is well enough during the hottest summer weather, but during the cooler portions of the spring and fall, a moderate amount of heat is necessary, since too much cold is as injurious in preventing the rise of cream as too much heat. For this reason I am satisfied that a large amount of butter is always lost by this class of farmers, for the lack of a properly arranged room in which to set their milk, where the temperature may be kept high enough to induce all the cream to come to the surface.

We found it necessary to warm our milk room until nearly the first of July, with the exception of a few of the warmest days in May and June, and resumed warming it nights and mornings early in September. A proper amount of heat has much to do in giving to the butter the desired color.

A very dry atmosphere, as well as a current of air blowing upon milk, is very injurious to the butter-making qualities of the cream. Cream, when dried, cannot yield as much butter as when soft, for the reason that whenever dry and soft cream are churned together, the butter globules contained in the soft cream break sooner than those of the dried, and thus while, to all outward appearance the butter has all come; much is still floating in the buttermilk and is lost.

There should be sufficient ventilation to carry off all steam which may arise from the milk while warm. To accomplish this the current of air should be admitted as near the ground as possible, by means of suitable openings, and, in order to regulate this current, movable shutters should be attached. A ventilator leading from the top of the room to the open air is also needed. In arranging the room, slats rather than shelves should be used on which to set the milk. We hear the setting of milk in deep pails highly recommended by some, but from my own experience I can say nothing in regard to it.

The sweetest and best flavored butter is undoubtedly obtained from milk which is allowed to stand only twenty-four hours, but we cannot get as much as when the milk stands longer.

In order to satisfy myself as to the proper time for milk to stand before skimming, two trials, of a week each, were made during the month of December, from which I obtained the following results: During the first week the milk was allowed to stand thirty six hours. The amount of milk for the week was 1,493 lbs. or 678 quarts,—2½ lbs. to the quart. From this milk 69 lbs. of butter were made, or an average of 1 lb. of butter for every 9½ quarts of milk. The second week the milk was allowed to stand but twenty-four hours, and the following was obtained: The milk weighed 1,296 lbs. and measured 589½ quarts, and from this amount 51 lbs. of butter were made, 11½ quarts of milk being required to make a pound of butter. Thus we cannot afford to skim the milk in twenty-four hours when the weather is favorable for butter-making, unless it is our intention to make cheese at the same time.

As a general rule, thirty-six hours seems to be, under all circumstances, the proper time for milk to remain before skimming. Whenever the weather is hot and sultry, however, we must of necessity skim sooner, but the cream should not be allowed to remain longer on the milk, even in favorable weather, as it will become bitter, and when churned imparts a like flavor to the butter. The right temperature is about 62°, but if the animal heat can, by any method, be quickly removed from the milk, a considerably higher temperature may be preferable.

In order to test the comparative merits of deep and shallow setting, we placed three pints of milk in some pans, and five pints in others. The same number of quarts were set in the shallow as in the deep setting, but the former produced but 22 lbs. of butter, while the latter gave  $23\frac{1}{4}$  lbs., a difference of  $1\frac{1}{4}$  lbs. in favor of the deep setting.

Cream should be churned in summer at a temperature of 56° to 58°, but for churning in winter it must be raised to 60° or 62°. No one should commence churning unless he knows exactly the temperature of the cream, as butter will not come without much unnecessary labor unless the cream is of the proper warmth.

Although it may be out of place to speak of a particular churn

By the Worcester West,	•	•	•	THOMAS P. ROOT.
Worcester North,	•		•	EUGENE T. MILES.
Highland, .				JONATHAN McElwain.
Deerfield Valley,	•	•		ROGER H. LEAVITT.
Bristol, .	•	•	•	AVERY P. SLADE.
Plymouth, .	•	•	•	CHARLES G. DAVIS.
Nantucket, .	•	•	•	Andrew M. Myrick.
Appointed by the Executi	ive,	•		JAMES F. C. HYDE.
Signed.	NE	WTON	S.	HUBBARD, Committee.

Messrs. Goodman, Clark and Birnie were appointed a committee to select and report upon a list of subjects for essays, and committees to which they should be referred.

Messrs. Stone, Fearing, Slade, Peck and Hubbard were appointed a committee to consider and report upon the time and place of holding the country meeting of the Board.

Messrs. Moore, Fay, Peck and Goodman were appointed a committee to report the assignment of delegates to attend the county exhibitions. It was

. Voted, To limit the number of the committee to visit and examine the Agricultural College to three; when

Messrs. Leverett Saltonstall, Andrew J. Bucklin and S. B. Phinney were constituted the committee for the present year.

Mr. Clark presented and read a report as delegate to the exhibition of the Martha's Vineyard Society.

Col. Wilder presented the following essay upon

## FRUIT CULTURE.

The undersigned respectfully reports that nothing of an extraordinary character in regard to fruit culture has occurred during the year 1871. In accordance with the general law that excessive production is always at the expense of succeeding crops, the crop of apples and pears of the year 1871 has been small, the natural result of the overbearing of the trees in the previous year.

The attention given to small fruits, especially the strawberry, is constantly increasing, and has already become not only an important but a profitable branch of culture. This is one of

the specialties which our cultivators are adopting, and in which they compete successfully with richer soils and more favored agricultural sections of our country,—a system which we believe must ultimately prevail in Massachusetts of cultivating those crops more generally, which are best adapted to our markets.

Among the lessons of experience which the Committee have learned, they would submit the following, as opinions which are now received and generally acknowledged as correct.

# THE INFLUENCE OF WARM, DRY SEASONS.

The observations of the last few years, under the influence of warm, dry seasons, would appear to have established the principle that such weather (without excessive drought), especially in the earlier part of the summer, is more favorable to the perfection and ripening of fruits, particularly grapes, than cold, wet seasons. The fact is prominently shown in California, as we have witnessed by personal observation; and is especially to be seen in the cultivation of the grape there, and also in Europe, and in our Northern States, where, under the influence of such seasons, neither the vine nor its fruit is affected by disease of any kind. These conditions we have noticed are also peculiarly advantageous for the formation of fruit-buds, and the storing up of the necessary perfected food for a future crop, and for the ripening of the wood, so necessary that it may endure the winter with safety.

## DRAINING OF FRUIT LANDS.

In conformity with the foregoing remarks, we see the importance of thorough draining of our fruit lands, which produces in soils not naturally possessing them the conditions of warmth and dryness which we have named, thus rendering the condition of the earth, in respect to warmth and dryness, analogous to that of the air, of the importance of which we have before spoken. Besides these advantages is the thorough aeration of the soil, whereby it is enabled to absorb fertilizing matter from the atmosphere, rain, and snow, and the moisture evaporated from the springs below.

### PREPARATION AND CULTIVATION OF THE SOIL.

It seems scarcely necessary in this presence to say that thorough preparation and enrichment of such soils as are not already rich is essential. Ordinary farm culture will not produce the highest class of fruits; they must have garden culture, and with this they never fail. After this thorough preparation, the cleaner the culture the better, and this should be shallow, so as not to injure the roots, but to preserve them near the surface.

## MANURES, AND THEIR APPLICATION.

The subject of manures is a most important one, and every year becoming more so. The supply of manure in this State is unequal to the demand, and every year increases the disparity. What would be our feelings if the supply of wheat, on which we depend for our daily bread, were inadequate to the demand? Yet men are not more dependent for life upon their daily bread than are our fruit crops upon the food which is supplied to them in the form of manure of one kind or another. To supply this want we shall be compelled to rely in great measure upon artificial fertilizers, and chemistry has not yet taught us, as it will doubtless in the future, how to supply the wants of our fruit crops with certainty and abundance. But we cannot too often or too forcibly impress upon the minds of all cultivators the sacred duty of saving every particle of fertilizing material, and applying it in such manner as will produce the utmost effect. And on this last point the lesson which experience has taught us is, that manure applied to fruit-trees should be either in the form of a top-dressing, or as near the surface as is consistent with the composition of the soil and the preservation of its fertilizing elements.

#### MULCHING.

While on this subject we will add as another of the lessons of experience, which may be said to be fixed, the advantage of mulching for dry seasons and soils, whereby the temperature and moisture of the soils is kept uniform, and the fertilizing elements in a soluble state, an essential condition for the production of perfect fruit.

## THINNING OF FRUIT.

This is another lesson which we have learned, and the necessity of which we have often endeavored to impress upon cultivators, and which every successive season teaches with stronger emphasis. It is absolutely necessary for all who send fruit to market to send large fruit, and the markets are constantly and progressively requiring large and fine fruit. Even the Seckel pear, which once commanded in Boston market the highest price, will not now, unless of extra size, sell for any more than, if as much as, common varieties of larger size. medium-sized fruit, or even one of smaller size, may be more economical for use, but until some decided change in the preferences of the majority of purchasers shall take place, large fruit will sell better than small. To produce this, the fruit must not only have good cultivation, but must be thinned. We may lay it down as a certain rule, as has been stated, that excessive production is always at the expense of both quantity and quality, if not in the same season then in succeeding ones; for when branch is contending with branch, leaf with leaf, and fruit with fruit, for its supply of light and food, it would be indeed an anomaly in nature if this should not result in permanent injury to the trees as well as to the annual crop.

#### SHELTER.

The necessity of shelter was not as soon perceived as some of the other lessons which we have named; yet, with perhaps the exception of a few favored spots, its importance is year by year becoming more generally appreciated. The removal of forests diminishes the quantity of rain, increases the evaporation of moisture, reduces the temperature, and subjects our fruits to greater vicissitudes, so that the peach and many of our finest pears do not succeed as well as formerly, except in gardens or sheltered places. The importance of shelter was well understood as long ago as the time of Quintinye, the celebrated gardener of Louis XIV., who, in his work on gardening, gives full directions for planting trees for shelter. This was in a country long settled and denuded of its forests; and though our ancestors, planting fruit trees in a virgin soil, thickly covered with wood, failed to perceive its necessity, we, in our older

States, who have come to much the same conditions as existed in the time of Quintinye, experience the same want.

### INSECTS AND DISEASES.

The subject of insects and diseases is daily attracting more attention, for their depredations are daily becoming a greater evil, and the importance of entomological investigations is every day more plainly seen. It is only thirty years since Dr. Harris first published his work on "Insects Injurious to Vegetation," and great is the debt of gratitude which we owe to him and to the succeeding investigators who have given their lives to studying the habits of these little "creeping things which be upon the earth," that they may teach us how to destroy those which prey upon our trees, and to distinguish our friends from our foes. Every plant imported from abroad brings with it a new insect or disease, and the dissemination of new plants and varieties, without which there can be little progress, inevitably disseminates their insect enemies. On this subject the words of Edmund Burke are appropriate: "The most vigilant superintendence, the most prompt activity, which has no such day as to-morrow in its calendar, are necessary to the farmer;" and we may add, still more to the fruit-grower, and tenfold more necessary in combating our insect enemies. The neglect of battling with these vile creatures is the great bane to successful cultivation. As long as moral evil exists in the world, so long may we expect there will be evil in the natural world, and he who is not willing to contend against both is not worthy of the name either of cultivator or of Christian.

These insect plagues can be exterminated, or be subdued, so that no material harm shall be caused by them. We have discovered means for preventing the ravages of the currant-worm, curculio, canker-worm, caterpillar, melon-bug and aphis, and the mildew and other diseases of our vines. If we can do this, is it not reasonable to suppose that we can discover remedies for, or the means of preventing, all the diseases and depredations that vegetation is liable to?

But some one replies, Let nature do all this, let nature perform her perfect work. True, but nature brings us weeds, thistles and thorns, insects injurious to vegetation as well as those that are useful; and we were placed in this world, not merely

to assist nature, but to meet with and overcome the obstacles which she sometimes places in our path.

For the Committee,

MARSHALL P. WILDER.

The report was accepted and laid over under the rule.

Voted, To appoint a committee of three to consider and report upon the time of holding the exhibitions of the Plymouth, Bristol, Bristol Central, Marshfield, Hingham and Norfolk Societies.

Messrs. Stockbridge, Hubbard and Peck.

Voted, To appoint a committee on printing. Messrs. Fearing, Knowlton and the Secretary.

Dr. Loring submitted reports as delegate to the Worcester West, Barnstable and Middlesex South Societies.

Mr. Fay, on behalf of the Examining Committee, submitted the following report on the

# MASSACHUSETTS AGRICULTURAL COLLEGE.

The undersigned, appointed by this Board a Committee for the Visitation and Examination of the Agricultural College, for the year 1871, beg leave to submit the following

### REPORT.

The several members of the Committee, with the exception of Professor Agassiz, have attended the examinations of the College at the end of each term during the year. On account of ill-health in the early part of the year, and an absence from the country the last part, your Committee were deprived of Professor Agassiz's presence and counsel at the several examinations, except at the annual examinations in July last. It may not be improper to state that his unexpected presence on that occasion, was not only a source of the highest gratification to your Committee, but unmistakably a powerful stimulus to the exercises of the College.

Some of your Committee commenced their official connection with the State Board of Agriculture at the beginning of the

past year, and it was with some misgivings that they undertook the discharge of the duty assigned them by your Board,duty which had for its object the careful and close examination and thorough investigation of the management and success of an institution which was nurtured by the State, and which was beginning to be, if it had not already become, second to none in the position it occupied, and in the encouragement and good will which it was receiving from the citizens of this beloved Commonwealth. And more especially was the responsibility which had thus been imposed upon us, the more forcibly impressed, when we remembered at the outset, that the year over which our duties extended was to be the most important one, so far as the interests of the College were concerned, that had occurred since its foundation. The term of four years was about to expire. The first graduating class of an institution which by very many had been regarded as a doubtful experiment was to be sent forth as an "advertisement," both at home and abroad. What had before been but an experiment, was this year to become a reality—or a failure. The old adage "by their fruits ve shall know them," was this year to be made impressively truthful as regards the past success and the future welfare of this institution, through the agency of those young men of the graduating class, who were to go forward into their several fields of labor either richly laden with the results of an agricultural and scientific education, received at an institution supported by the generous benefaction of this Commonwealth, and thus proving the wisdom of its founders, or else found wanting when "weighed in the balance," and thereby stamping a stigma upon the College, and causing discouragement to its friends, who had hoped so much and labored so well to promote its best interests. With these reflections impressed upon us, our first visit to the Agricultural College (which was at the close of the spring term), was anticipated with no small degree of interest to the Committee, and this interest was not in the least abated at any subsequent visit during the year.

Your Committee have endeavored to take particular notice of all that in any way helped to make the College what it is or what it should be, that they might be able to present to your Board as intelligent a report as the circumstances of the case would permit, that you might the better judge what compensa-

tion the citizens of this Commonwealth were receiving, and what were the guarantees for the future from that institution, which was now so cheerfully receiving your fostering care.

The examinations of the several classes in the recitation rooms were attended by the Committee at the close of each term, and while they do not deem it necessary to refer to each class particularly, there was one feature so manifestly prominent in nearly all, that we regard it as a fact worthy of particular notice, to wit: "each student was taught to think for himself"; the student in some branches being compelled to pursue the investigation of the subject without the aid of any text-books; and, in the judgment of your Committee, if the success of any one department was greater than another, it was largely indebted to this cause, as infusing more life and zeal in the professor, and a wider scope of thought, greater independence and proficiency in the pupil; and while we would not recommend the absolute abandonment of all text-books, we would suggest that, if less reliance were placed upon "text-books," and the students compelled to search the great "book of nature" for ideas and scientific truths, we should have stronger and better men,-men of more enlarged views of life, and practically better fitted for the great work entrusted to them; having derived their thought and founded their judgment not upon the opinions of other men, but upon the great scientific truths which they had garnered from science itself.

The course of study pursued in the several branches is so minutely defined in the report of the trustees, that we do not regard it necessary to enlarge upon it. We have noticed with great pleasure, the efforts of the several classes in rhetoric at the close of each term, and feel justified in saying that in our judgment they would compare favorably with those of any institution bearing the name of college within the Commonwealth. We have been the more gratified in this, because we believe that while the main object of this institution is and should be to provide a thorough course of instruction in the science of agriculture and those sciences more immediately connected with it, yet the value and importance of self-possession and self-reliance, obtained only by a constant use and careful culture of the oratorical powers, cannot be overrated; for, after all, it is to be the

most effectual medium through which the value of the collegiate education is to be made known to the world.

The power of communicating and transmitting ideas with the human voice in an interesting and impressive manner, is one of the greatest gifts bestowed upon man, and its culture in an institution like this should not only be encouraged, but carefully guarded and earnestly recommended.

The graduating class, consisting of twenty-seven members, acquitted themselves with great credit in their several examinations and graduating exercises. Their uniformly gentlemanly bearing and manly appearance were noticeable in a marked degree. No one could look upon that company of young men without realizing the wisdom and foresight of those minds that originated the idea of requiring "military tactics" to be taught in agricultural colleges. The influence of their military training was so manifest, not only upon their general physical health and development, but also in those indispensable attributes which help make a true gentleman, that we do not believe too much importance can be laid upon this branch of their education, both as exerting a healthful influence upon the students themselves, and as a safeguard for the protection of our country in the future.

We regard the professors in the several departments to be eminently qualified for the work assigned them,—earnest, zealous workers for the interests of the College; and no one more so than the honored President, whose very being is inseparably connected with the best interests of the College and farm. Fortunate indeed that its management has fallen into so able hands.

We are happy to say that the recommendation of your previous committee relative to the establishment of a professorship of veterinary science has been heeded, and such professorship has been established, an appointment made, and the science will hereafter be thoroughly taught.

The farm itself has been examined with considerable care, with a view of determining what was the mode of farming adopted, and the practical result to the College and community of any experiments that may have been tried for the purpose of ascertaining what crops to raise and how to raise them, so that they should return the greatest profit to the producer.

The farming has been under the immediate supervision of

John C. Dillon, the Farm Superintendent, a gentleman admirably adapted to his work. The destruction of a part of the farm buildings by wind, the year previous, caused the necessity of erecting a large number of sheds for the protection of the cattle, sheep and swine, and the superintendence of the erection of these sheds unavoidably demanded the personal attention, labor and constant oversight of the Farm Superintendent for a large part of the season, so that his attention was diverted from the farm much more than it otherwise would have been. The principal attention paid to the farm the past year has been in raising and harvesting the ordinary crops, with, perhaps, a single exception. The raising of the "sugar beet" has received considerable attention, for the purpose of testing the expediency of making it an agricultural enterprise in this Commonwealth. The results of the experiment will be in detail before you, in the report of the trustees, who have, through eminent professors and chemists, tested it thoroughly. Your Committee are satisfied from personal observation that the "sugar beet" is a profitable crop to raise for feeding purposes, and that sugar of the finest quality can be made from it. Whether the manufacture of sugar can be made profitable in Massachusetts we have no means of judging advisedly and express no opinion.

We are informed that the products of the farm the past year, are as follows, to wit:—

Roods.	Poles.
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1	9
-	-
-	_
2	83
2	20
l –	-
2	-
	2

The horticultural department has become one of the most attractive features of the College. The very liberal donation it has received from Dr. Durfee, places it in a very substantial

condition. The influence upon the students can but be of a healthy character. It cannot well be dispensed with, and should receive the attention its importance demands.

The farm buildings, including the barn and sheds, are now in very fine condition. The erection of the sheds already referred to supplies a much-needed demand. They are constructed with a view of providing for the comfort of the animals, and great convenience in their care; and although not entirely completed at the last visit of the Committee, yet they had so far progressed towards completion as to indicate their value.

The labor about the barn in the care of the stock, we were informed, was principally performed by the students, and evinced care and economy in its management.

The live stock generally was in good condition, consisting of nineteen swine and seven horses, and about sixty head of cattle, largely of thoroughbreds, and representing seven different breeds.

We, however, would suggest that this branch of the agricultural part of the College is one which requires in its management great skill and sound judgment, and in our opinion the selection and breeding of stock for the farm should be entrusted to the care of one man who is thoroughly acquainted with his business, and who from his experimental knowledge is able to determine what particular breeds and crosses are the most profitable; and especially so that when he is convinced that a particular breed or animal is unprofitable for the farm, he may have full power and authority to discard it and introduce others in its place.

The experiences of stock raisers in different sections of the country have been so varied, owing to the difference in climate, quality of food and various other causes, that no general and fixed rule has been or can be adopted which seems wise or safe to follow. Hence the necessity of placing the care of so important a branch, and one upon which so largely rests the reputation of this institution, in the hands of one who himself personally is able to trace the history and results of his experiments in this regard from day to day.

We are gratified that so much care has been already taken, and that recently a new interest has been awakened in this regard, and we are confident, if continued in the hands of the present manager, unprofitable stock for the farm will not long be tolerated.

The farm already begins to show the beneficial results of underdraining, a large tract of mowing land having been by this means reclaimed, so that from comparative worthlessness it has become a source of great income.

The old and worthless apple-trees on the farm have been removed, and an orchard of the different kinds of fruit, sufficient at least to supply the demand upon the farm, has already been planted.

The raising of the grape in Massachusetts is no longer an experiment but has proved to be a very profitable investment, and the universal acknowledgment of this fact warrants the Trustees of the College in making large provision for its culture, a well-located vineyard of two acres having been planted. There can be no reasonable doubt of its success.

The more immediate wants of the College at the present time, seem to be more enlarged accommodations for pupils, and also some means to reclaim the pasture land which, to a great extent, is at present in an unprofitable condition.

We can hardly expect that an institution still in infancy would have arrived in this short time to that degree of perfection, that it presents no material for the critic.

Your former Committee suggested that the College should possess a "working farm," in which we fully concur; and it cannot be expected that all the rough places will at once be smoothed, or the unfertile spots reclaimed. It must necessarily be the work of many years. What we have a right to expect, and all that we can reasonably ask, is that the best use should be made of the liberal provisions in its behalf that can possibly be made, so that the success achieved by the triumphant victory of the students of the College in their late trial of "muscle," shall be simply emblematical of that greater triumph which in the future awaits the representatives of the Agricultural College, when they shall enter the race for a trial of "brain and muscle."

We congratulate the State Board of Agriculture upon the eminent success which has thus far crowned the efforts in behalf of the Agricultural College. Let its friends continue to be

mindful of, and watchful over its welfare. Let no unjust criticisms be allowed to pass with impunity. Let the hands and hearts of the faithful professors and trustees be supported and encouraged, and the time is not far distant when there will be one universal song in favor of the Massachusetts Agricultural College.

F. F. FAY.
N. S. HUBBARD.
JOHN JOHNSON.
WM. KNOWLTON.

The Report was accepted, when it was voted to take from the table the Essay on the

## MANAGEMENT OF THE DAIRY.

A motion to adopt the report led to the following discussion:-

Mr. GOODMAN. The report was long and interesting. I understand it is to be published, and until we see it in print we shall not be able to ascertain fully its merits, and the objections to it. I believe we all know the system called the Barre system, and the character of the dairy work up there, but there are one or two matters in the report which I should like to inquire about, as they are of considerable importance to us as farmers: one is the length of the flooring for cattle. If I understand Mr. Ellsworth aright he thought the planking for cattle should be as long as the cattle. What length did you give?

Mr. Ellsworth. I gave a length of four feet nine inches, or any length so that the whole heft of the animal when down will rest upon it.

Mr. GOODMAN. So that the manurial matter will drop off behind. Another point was, Mr. Ellsworth thought there should be a little slope. Is there any necessity for having a slope for cows? It may be necessary for steers and bulls, but do not cows lie a little better if the planking is level?

Mr. Ellsworth. I shouldn't want it to slope towards the head at all, I should prefer to have it slope a little to the rear, I did not give the amount of pitch, except very little.

Mr. GOODMAN. I understand you it was better to lay the planks with the grain than across. If laid with the grain I find

they become slippery, and when laid across the grain I find that does not take place.

Mr. Ellsworth. I should prefer to have short plank, and sift a little sand on the floor if necessary to prevent slipping. It is much easier to renew the planks.

Mr. GOODMAN. If there is sufficient bedding of course that is not necessary. I think my experience will be found to be the experience of a good many farmers, that where planks are laid across slipping does not occur, grooves do not wear in them so easily.

One other point which Mr. Ellsworth touched upon I did examine into; and that is, putting milk into deeper pans. After our fall meeting I visited Col. Waring's dairy. I find he keeps a very fine breed of Jerseys, and a large number of cattle, making butter principally for the Newport market in the summer, and more or less for the Boston market in the winter. His pans are made on an improved German principle, and they are about six inches in diameter, if I remember rightly, by eighteen inches deep, and they were immersed in running water. Instead of taking for his large number of cows about twenty or thirty pans, I think the milk was all put in about half a dozen. While I was there he skimmed the cream from one by means of an ordinary dipper, and the cream that came up at that time by measurement, I think, was nearly two inches deep. So far as I could learn from him, he did not find that there was any increase of cream by this process, but he thought the butter made from it a little more uniform in character, and he thought the expense of having a few cans instead of having so many was less, and upon the whole it was less trouble. He had a cellar made for the purpose, where the temperature was kept the same both winter and summer, with water always running through from a spring, and the pans were kept in that all the time. He did not get more cream, but he thought he got it more easily, and with less trouble. I understood him to say he got as much. Of course this is a matter for experiment, and those of us who have running streams of water can very easily try it.

QUESTION. Did he try a certain number of quarts of milk each way, and see which took the most quarts to make a pound of butter?

Mr. GOODMAN. No, sir; but he is a writer on this subject as

well as a practical agriculturist and man of science. Everything that is done on his farm is generally done by weight and measure. He keeps an accurate account of what is sold, and all that. I understood him that the amount of butter obtained from the same number of cows did not differ materially under the two systems, but he thinks the quality was a little better under the latter.

QUESTION. Did he keep the temperature the same the year round?

Mr. GOODMAN. Yes, sir.

QUESTION. I should think he would have to keep the temperature warmer in winter because the water is colder than in summer.

Mr. GOODMAN. Spring water is about the same temperature all the time.

QUESTION. What was the depth of the pans?

Mr. GOODMAN. About sixteen or eighteen inches I think.

QUESTION. I think spring water brought in aqueducts varies very much in temperature.

Mr. GOODMAN. I don't think there was any fire introduced; it was down in a cellar where it is supposed to keep nearly the same temperature; I am not so certain about that. I merely mention this for the consideration of the gentlemen engaged in butter making.

ALBERT FEARING. I understood the gentleman to say in his report that he usually dried off his cows about five weeks previous to calving. I should like to ask if eight weeks is not better?

Mr. Ellsworth. It is nine weeks in the report; I think you misunderstood me.

Mr. Fearing. I should like to ask, if roots are fed immediately after milking whether the milk will not invariably taste of the roots? Suppose you give them cabbages, or some of the strongest of the roots, in no case will the milk taste of them?

Mr. Ellsworth. I think I said where they were fed immediately after milking they invariably did not impart any unpleasant flavor to the milk or butter. That is my experience. I have fed cabbages and flat turnips just after they were pulled from the ground to my cows, and the butter has come to this market. Probably most of you know Mr. Hovey, and if it had not been

good he would have detected it. I have no doubt if they were fed half an hour before milking the milk and butter would taste of them.

Mr. Fearing. In regard to the amount of milk required for a pound of butter,—twelve quarts I think the report stated; down in our part of the country we find that nine quarts on the average will make a pound of butter; that is, milk from Jersey cows.

Mr. Ellsworth. As I stated yesterday, it is very important, if you have anything to report, to report it as it is. I reported it as I found it. I gave the stock it came from and the butter that was produced, under all circumstances, and at all times of the year. Now you will notice that this was given in July and in August, but the reports that we get in the newspapers as to how much milk it takes to make a pound of butter are not all satisfactory to me; they are given mostly in the butter-making months, not in August, or in each month through the year. I have no doubt myself but that the Jersey cow is preferable to make butter from; but as to the quality of the butter made from the Jerseys being better than that made from other breeds I have my doubts. I should like to hear from Mr. Flint on that point. His is as good authority as we have in this country on dairy cows and milk and butter, and what it should take through the season to make a pound of butter.

Mr. Fearing. I milked last season ten cows, mostly pure blood, some grades, and we found that on the average nine quarts of milk would make a pound of butter. I should like to ask if different kinds of feed would not make a difference. For instance, we have in our town what we call low ground, not exactly meadow, and we find that the milk of the cows feeding there is quite inferior to the milk of the cows that feed upon our high land. It has made a very decided impression, so much so that two or three farms there have the reputation of having poor milk. Even if the cows are Jerseys they find it changes the milk. I would ask if these gentlemen have had any experience in that way. This grass is English grass, not what we call meadow grass, but it grows on low land where the fog lies in the morning.

Mr. Ellsworth. That is my experience, and it has been considerable on that point. I have found invariably when my

cows run where there is a large abundance of fresh feed that the flow increased, but the quality was not near as good for making butter. The milk was richer, and I could make more butter, from milk obtained from a small amount of good feed, than I could from a large amount of feed of poorer quality. It is so in winter as well as summer: when we give a poorer quality of feed, and work in straw and meadow hay, the milk and butter are poorer in proportion.

Mr. Allis. Mr. Ellsworth stated in his report that for a few days after a cow had calved he prevented the calf from bunting the udder from fear of injury to the cow, and then after that he allowed it to bunt as much as it chose. It has appeared to me in my experience that if a calf bunts the udder it injures the cow even when you are fattening the calf. In speaking of milk, there have been experiments in our dairy, and we have made sixty ounces of butter from twenty quarts of milk from an Ayrshire cow. The experiment has been tried repeatedly, and all the feed the cow had was what hay she wanted and two quarts of meal.

Mr. ELLSWORTH. I think I stated that if the calves were allowed to bunt the udder while there was any inflammation, it would be very apt to injure the cow; but if the bag was perfectly free from any inflammation, I have never found any trouble whatever.

Mr. Allis. I should like to ask Mr. Ellsworth if he has any difficulty in getting a cow with ealf from one season to another.

Mr. Ellsworth. I have had a good deal of difficulty in that way.

Mr. Allis. Can you tell us of any kind of feed that will operate beneficially in that respect?

Mr. Ellsworth. I do not know as I should be justified in saying that any kind of feed will operate towards getting a cow with calf. My observation is, if a bull serves a cow in the earliest part of the heat, it will be more likely to be effectual. I have observed this more frequently where a bull runs with a herd of cows. Nature teaches them the right time. My observation has been that the cow receives the bull in the earliest part of the heat, and it is very seldom that she receives him more than once or twice.

Mr. Allis. There has been great complaint in our locality,

for two or three years, in regard to this matter, and at a meeting of the Harvest Club of the Connecticut Valley, in our town, some six weeks ago, one of the best dairy farmers in Conway said he had been troubled very much in this way for several years, until within the last year he was told by some one to feed his cows with bone-meal regularly. He has tried it for the last year, and he says that he has not had a single cow out of ten fail. I have adopted that plan within the last few months with my own cows. I give them about a great spoonful of bone-meal once a day, and I have had no trouble this winter at all in that matter.

Mr. Hubbard. There is another very important matter in connection with what Mr. Allis has said. I should like to know whether there is any difficulty in different parts of the State in regard to cows losing their calves before the proper time. I know that last year I heard of twenty cows. I lost seven, and it was something that never had occurred before in my experience. This year, up to the time I came away, I lost four without any apparent cause whatever. If there are other members of the Board in different parts of the State suffering in this way, I should like to know it.

Mr. Bucklin. I should like to ask Mr. Ellsworth if he practises bleeding a cow or drenching a cow with cold water after she has taken a bull? I had a Durham heifer that would not breed, and finally I was advised to bleed her until she could hardly stand. I did so, and since that she has bred without any trouble. In regard to Mr. Hubbard's remarks, I will say that I lost a calf from a very choice heifer a few weeks ago.

Mr. Ellsworth. No; I never tried anything of the kind.

Mr. J. F. C. Hyde. Perhaps I may be pardoned for saying a word or two—though I am not a cattle man, and do not profess to teach any one here or any where else—in regard to this matter of butter, butter making and butter selling. I am interested in both, as I do not make all I need, though I intend to hereafter. I like the Jersey butter, and I was rather surprised at some remarks that the Secretary made in Vermont, as I saw them published. I am very particular about butter, and have bought it at high prices, paying from eighty cents to a dollar a pound for table butter, week after week, having Jersey butter

always. The point I wish to make, and I hardly need speak of it here, for no doubt all the gentlemen present have realized it as much as I do, is the importance of making good butter. Now, there is always plenty of poor butter,—hundreds of tons of poor butter in the market. If gentlemen go through Boston market, as I do year after year, in pursuit of good butter, not only for myself, but for my neighbors,—for they have an opinion that I am a pretty good judge of butter, having cultivated this matter of tasting to some extent in horticultural matters,—they would see that the quantity of good butter is very small; it is amazing how small it is in comparison with the amount of poor butter. I know a dealer who brings into this market hundreds of tons, and perhaps thousands of tons, and the way I manage to get good butter is this. In the autumn I say to these dealers from whom I have had my butter for ten or twelve years, select out of the best butter you bring here, four, five or six tubs, and send me up word. They will be a month perhaps before they get four or five tubs which they want me to look at. Then I go down, and perhaps I won't find a tub of really good butter, or at least butter that I should wish to put on my table. They say they are the best they have, and they have selected themout of tons. They will say: "Look at the quantity of butter we have there, yet there is not a tub of it you would take as a gift to put on your table." Then I say: "Set out the best that comes in the next few weeks;" and this year I was over two months getting my butter.

You may say I was very particular. I am particular enough to get good butter, and I did succeed in getting two or three tubs of very good quality. Now, it does seem to me that if the people of Massachusetts, and all over the country, realized how they suffered by this state of things (both sellers and consumers), we would speedily get better butter. Look at the difference: here I pay—and I presume others of you do the same during the summer months—eighty cents a pound for my butter, and I have paid as high as a dollar a pound. Mr. Sargent's butter sells for a dollar and a quarter a pound, and the butter made by other gentlemen sells from eighty cents to a dollar a pound, while medium butter brings only from twenty to thirty-five cents a pound. What makes this difference? It is largely due to the management in making up of that butter.

Now, is it not possible for people to make universally a better article than is now made?

Mr. Ellsworth tells us that certain conditions, properly observed, will give good butter, with now and then an exception. If certain rules may be laid down for making good butter, pray tell me why our people are making a poor article of butter almost universally, when a good article might be made? I do not find fault with the butter makers any more than I do other people, but the butter makers are blind more than other classes of farmers to their own interests, more than any other set of men. If they would make a better article of butter, it would find a more ready sale, and a much larger price would be paid for it than is paid at the present time.

Another thing is the shape in which it is sent to market. A great deal depends upon the way in which fruit, or butter, or any thing of that sort, is sent to market. If it is sent in good condition, done up in good shape, the farmer realizes more for it; three or five, or, perhaps, ten cents more a pound on butter, than he would if it was prepared in an indifferent manner for market.

The way our Barre friends send it, I believe, is in a box containing eight to twelve pounds, and I have once in a while bought it in that way. But if it is sent in lumps, it should be put up in an attractive way. People will pay a little more for a handsome lump of butter to put upon the table, than they will if it comes in a box, unless it is made into lumps at home, which is sometimes done.

The principal point I make, and which I wish to impress upon every body who makes butter, is to make better butter. If it is true that they have not good stock to make butter from, then they had better turn their attention to improving their stock. I sometimes think I should like to take the butter makers of New England and New York, and other places, who send their butter to the Boston market, and make them taste the butter they would find in the stores here; they would go back home determined to make better butter in future.

The best butter, it is said, comes from Vermont. I do not find it so. I find the best winter butter comes from New York State, and some of the best butter in summer comes from about Boston. To eat some of the butter that is made is worse than taking medicine; because when you take a dose of nauseating

medicine you make up your mind to it. Those poor fellows who have to dine at the hotels and restaurants in Boston, know what it is. I never touch the butter in them; I cannot. I had rather go without. Their excuse is, that it is as good as the average butter in Boston; that to get better they have to pay ten or fifteen cents a pound extra. Is there not some way to raise the standard of butter, so that we may have better butter in the market?

Mr. Sturtevant. The gentleman from Hingham asked a question in reference to the effect of the feed upon butter, and the answer to him was, that if certain food was given half an hour before milking, it affected the milk, and consequently the butter; but if fed half an hour after milking, it does not affect it. That certainly is a matter of importance to everybody, because if we feed as he says, and that affects the butter so seriously, that is a matter which every gentleman at this Board wants to understand. It is the food that we give our cows at a certain time, as I understand it, which affects the milk, and induces bitterness in the butter, even if the utmost care is taken in making the butter.

Mr. Hubbard. I have no doubt of the truth of the remark just made, that the food given to cows will affect the milk. But that was not the subject on which I wished to speak. I desire to refer to one point suggested by the essay of Mr. Ellsworth, and that is, as to the time which milk should stand before the cream is taken off. He said that milk standing twenty-four and thirty-six hours would give different results in the quantity of butter, but he said nothing about the quality. Now, I have been told that cream that was taken off of milk after it had stood twenty-four hours, if it was taken off separately could not be churned into butter. The question has arisen in my mind whether the little more cream that we got by allowing the milk to stand more than twenty-four hours, was not at the expense of the quality of the butter. It has been said that butter has been sold from 45 cents to \$1.25 a pound. If the butter made from cream that is taken off in twenty-four hours is of a superior quality, is it not better to take it off then than to let it stand twelve hours longer, although we may get a little more cream, if the butter is to be of an inferior quality?

Mr. Ellsworth. If you disturb milk after it has stood twelve

hours, the butter made from the cream that you get after that is never of so good quality as it would have been if the milk had remained undisturbed for twenty-four hours. You get the finest and best quality of butter in twenty-four hours, but I am satisfied you get more butter if you let it stand longer, and I have never been able to find anybody who could detect difference enough to make any difference in the price. I have no doubt that cream taken from milk after standing twenty-four hours, and churned immediately, before it has changed at all, will make the sweetest butter. When it has remained thirty-six hours, the cream is new, but it is not sweet. That is the time, I think, to make the best butter, when it is new.

Mr. Hubbard. I had some experience in the Worcester Co. cheese factory, which was the first factory started in Massachusetts. We operated somewhat in the making of butter and cheese at the same time. We heated our milk with steam, and we applied the steam-engine so as to churn the milk and make butter from that. We made a very excellent quality of butter, but we found that we got a small quantity, and then the milk went right into cheese, which, to all appearance, was just as good as before; showing that the butter, when everything is perfectly sweet, is of excellent quality. We found this difficulty: that when so much liquid was churned, the amount of butter was so small that it troubled us to gather it well, and we abandoned the experiment.

Mr. Hadwen, of Worcester. In the essay of Mr. Ellsworth, he gave us the length of the stalls. It seems to me the better way is to make your stalls a little short, and then lengthen them according to the length of your cows, which you can easily do by putting down joist. You find that some cows need stalls from four to eight inches longer than others. And furthermore, if you have your flooring level, and then put down 2 by 4 joist on the back part of the floor, and fill the floor with bedding, that prevents the bedding from slipping back, and makes a very comfortable, dry floor for the cattle to stand on.

Now, in relation to bitter butter. There are various causes for that. If you feed your fodder with wormwood in it to cows in autumn, you will have bitter butter; and of course you will have bitter butter if you let your cream remain too long. Mr. Hyde has alluded to the poor butter which is made. There are

some farms which cannot produce good butter. I knew an instance in our county where a shrewd farmer, finding he could not make good butter at home, bought the farm of a man who was noted for good butter, and there he was successful;—but the man who had always made good butter, moved his stock and his wife to another farm, and he could not produce good butter—butter that would be satisfactory to Mr. Hyde or any one else. So there is a great difference in farms as to their capability to produce good butter.

Mr. Ellsworth gave a pretty large quantity of milk to a pound of butter, but I believe the Barre cows have not been bred for butter-making purposes, but for beef-producing and cheese-producing cows.

Mr. Converse. I would like to ask if there is any gentleman present who has ever practised churning milk. I have known persons in Vermont who churned their milk immediately after milking, and they said they produced sweeter and better butter, and got more of it, than by churning cream.

Maj. Phinney. That applies to persons who make their butter from a pint of milk.

The CHAIRMAN. A neighbor of mine churned his milk for a long time by an English machine, introduced for the purpose. He had some butter churned before a party of people who were invited to see it, and the butter was delicious. But he had to give it up for some reason—I do not know what.

QUESTION. Were the cows Jerseys?

The CHAIRMAN. No, sir; grade cows.

Mr. Hyde. It was my fortune or misfortune to sell a herd of pure-bred Jerseys for Mr. Converse, at Southborough. Mr. Converse had bred for a definite purpose, and I think had succeeded well. The reason I speak of it is, that a great objection has been made to the Jersey cattle, because of their small size and their poor quality for beef. Now, Mr. Converse had bred with two or three things in view. First, for the best butter-making qualities, in which I think he had succeeded. And my reasons for saying that are these: first, I have eaten his butter, and I know it was good butter; second, I never saw better skins on animals in my life. Then he had bred with a view to size and roundness, and plumpness of form, which are not usually found in the Jersey. He had some bulls there, one of which, in par-

ticular, was as fine a bull as I ever saw in my life. He had secured cows of good size, pure-bred Jerseys, not grades,—I will not say large, but I say of good size,—which were not rough and bony in appearance, but well filled up, of good forms, and which gave excellent milk. He had started with that object in view; but unfortunately, before the experiment had been brought, as it seemed to me, to its highest degree of success, reverses in business compelled him to sell his stock. But I believe that he had started in the right direction, and certainly had made a great gain. But if it turns out to be true, as has been said in various directions,—and I seem to feel it in the air,—that the Jersey butter is not good butter, then of course this all goes for nothing.

Now, I have been foolish enough to believe that Jersey butter was most excellent butter, and have continued of that mind up to within a few weeks. But if it be true, that we are to abandon Jersey stock for butter-making,-and that has been their chief merit,—where are we to look for butter? I have said that New York butter is the best butter that comes into this market for winter use. It is not because they have the best breed of stock there, for I understand that they are largely Shorthorns and grade Shorthorns that are used for butter-making: it is because they have some of the very best grazing facilities there. They have some of the very best farms, and a large amount of white clover is used there, and it strikes me there is no better food to make sweet butter than white clover. Whether that be so or not, I find no butter in the market that has the color that the Jersey butter has; I find no butter in the market that has the flavor of the Jersey butter. It is fine, it is delicate—possessing a fine and delicate flavor. It seems to be refined, so to speak. It is not orude, like some of the butters, but it is fine, delicious butter. It is said that it lacks flavor, and I am obliged to acknowledge that it is not always as high-flavored as butter ought to be that looks so well as Jersey butter does. I have found New York butter that did not look so well that really possessed a finer and better flavor. What I want in butter is this: I want color-all the natural color you can get into it. It cannot be too highly colored for me, provided it is all nat-I want it, then, perfectly fine, smooth, not greasy. People laugh at me for talking about greasy butter. I want it so that it will cut just right and not be greasy. I want it so that it shall not only be perfectly sweet, but so that is impossible to detect any foreign flavor in it. And I want it to possess a peculiar sweetness, that I can hardly describe. You can better understand it after you have gone into a flower garden and inhaled the fragrance of that: There is something that is indescribable, but you want to have that in butter. For summer butter, you want but little salt; for winter butter you want more. A great deal of butter is ruined by salt. Farmers think they make a little money on the salt they put in, for which they fancy they get a high price. The fallacy of that is shown in the fact, that when that butter is sent to market, they have to take off from three to five cents a pound, in consequence of this salt. That should be guarded against.

Now, what we want is, cattle that will make that kind of butter, if we have not got them. If they are not to be found in the Jerseys, where are they to be found? Are they to be found in the Ayrshires?

Dr. Loring. Yes, sir.

Mr. GOODMAN. To a small extent.

Mr. Ellsworth. Grades.

Mr. Hyde. I have not found these qualities in Shorthorns. I should not advise any man to go into Shorthorns as butter producers. Take the largest-sized and best-formed Jerseys you can find, and I don't believe there is a stock of cattle known to us that will give us butter of such uniformly good quality, or so much to a quart of milk. Gentlemen talk about twelve or fifteen quarts of milk to a pound of butter. I believe that with Jersey cattle you will not require over nine quarts to the pound, and you may follow it right through the season. I believe Mr. Converse gave me figures far below that, something like six and three-quarters or seven quarts to a pound of butter.

Now, such animals can be produced. It costs no more to feed them than others. Mr. Ellsworth feeds his cattle in the right way. Take care of them; make a business of it. Do not do it in the shilly-shally way that thousands of farmers do; but do it thoroughly, systematically, as if you meant to make a business of it. What I want is, to call the attention of the farmers of Massachusetts to the important point of producing

the best butter, that will bring the highest price in the market, and securing the breed of cows that will do it.

Dr. Loring. I did not hear Mr. Ellsworth's essay, but I think it must have been a very sensible and a very interesting one, because I find that almost every man who attempts to deal with it, starts off on his own account, but ultimately comes back to the essay itself.

There are one or two matters upon which I desire to make a few remarks. The first is, in reference to the flooring upon which cattle should stand. I think it should be as level as possible. Cattle and horses should stand on a level floor; if anything, the floor on which a horse stands should fall off at his fore feet rather than his hind feet. The fall for the water should be underneath the floor upon which the animal stands. If you are stabling cows, the fall of the water is provided for by nature; but if oxen or horses, the fall should be underneath the floor. The floor should be made open, in such a way that the water will flow underneath the floor upon which the animals stand, on to a sloping floor, down which it can fall. It is a very easy and simple thing to do. I mention this, because I have made a business of studying floors, and I am sure that many forms of lameness in horses are attributable more to badly constructed floors than to any other cause.

In regard to the animal which makes the best butter, I do not believe that there is any one special breed which will make what would be universally recognized as the best butter for market. I think Mr. Ellsworth need not be ashamed of his grade Shorthorns as butter-making animals. They give a large amount of milk, I grant, owing to the abundance of the feed they find upon the Barre pastures; but I know perfectly well that there are in Barre and other towns where grade Shorthorns are used, cows that are admirable butter cows,-good animals for every dairy pasture. It is so with the Ayrshire. If you put a grade Ayrshire, or an Ayrshire, or a grade Shorthorn, or a common native cow, upon a good pasture, especially adapted to the purpose of making butter, if she is a good cow, she will make a pound of butter from eight and a half to ten quarts of milk, or twelve, perhaps. I have myself a grade Ayrshire cow, fed on winter feed, that made a pound of butter from eight quarts of milk. These cows are not common, but they can be

found in almost every breed we know of. That the Jersey cows make a pound of butter from less milk than any other cow, except the Devon, I have no doubt. I think the Devon and the Jersey carry with their milk more of the butteraceous quality than any other class of animals we have. But the difficulty to which Mr. Hyde alludes, with regard to Jersey butter, grows out of the fact that it is so loaded with butteraceous matter that it is difficult to transport it. You will find a great many hotel-keepers, in various parts of this State, who complain of Jersey butter, which would be admirable could it be eaten upon the farm where it is made, but which, before it reaches the market, is utterly worthless. They complain that it will not keep as long as other butter will.

That brings me to the great point in this butter questionthe difficulty in transportation. If Mr. Hyde lived upon a farm, and had a good, intelligent butter-making woman, or wife, or daughter, who understood exactly the old-fashioned mode of making butter, and it was taken from the dairy room to his table, he would find no fault with it; he would not know any difference between Orange County butter and Berkshire or Worcester County butter. If he could eat it in the place where it is made,—if it is made with care, so as not to absorb any noxious gases, or any of the odors that gather around a stable or cellar, (for butter absorbs everything with the utmost rapidity), he would find no difficulty in getting good butter. The difficulty is in transporting from one place to another. I know from experience that Mr. Ellsworth has good butter on his table. I know that before cheese factories came into vogue, he had good cheese on his table; how it is now, I won't undertake to say. But if a box of his butter were brought from Barre to Salem, and he should try it there, he would never recognize it as his own. I think it is hardly possible to get a firkin of butter fifty miles from the country, in the heat of summer, for instance, and have it come out exactly as it was when it started. The process of transportation, the agitation of carrying it from one place to another, the effect of changes of temperature upon it, the hest of summer and the cold of winter, the effect of placing it in a freight car, one or all of these causes have deteriorated its quality. Have we not heard, in old times, when we had no railroads, often with a sort of sneer, about "store butter"? The

difficulty was, that the butter had absorbed all the odors of the store, and there are those here who know that the odors of an old-fashioned grocery store were somewhat rich. It is the difficulty of transportation therefore.

Mr. Hyde says he makes a portion of his own butter; but those of us who purchase our butter must take it for granted that we must labor under the same difficulty as those who purchase their fruit and vegetables. You cannot get anything from the farm to market, and through the market into the mouth of the consumer, precisely as good as it is when it is used on the farm where it is grown. Everybody knows that vegetables brought from a distance are no more the vegetables they were when they started than chalk is like cheese.

Mr. Hype. Can't we have a better butter?

Dr. Loring. We have more good butter than you think. The difficulty is in getting it from one place to another, and in getting it through the hands of the middlemen. We must, therefore, exercise our own ingenuity in selecting, or else return to the difficult and somewhat extravagant business, as some of us know, of keeping our own cows and making our own butter.

Mr. Hype. That I am going to do.

Dr. Loring. I have made in different parts of Massachusetts, arrangements for the delivery of butter in the most rapid manner; but I never could get it from a farm in Western Massachusetts, for instance, into my own house in a perfectly good condition.

Now, in regard to feed. That is another thing we must submit to. We cannot have everything as we would have it. We cannot make a new pasture out of an old one. We cannot make all hay-mows alike, and meal gets heated going through the markets. It is the same difficulty which attends the transporting of butter from one place to another: the wonderful faculty that the animal economy has of taking up the flavor of different articles of food. It is so in the human system; it is eminently so in the domestic animals; and it comes in nowhere so readily and so rapidly as in those portions of the animal economy known as the milk and butter producing organs.

So we must expect to submit to these evils. We can, by exercising a little ingenuity, get rid of them in part. Feeding

roots directly after milking will, as Mr. Ellsworth says, prevent the flavor getting into the butter somewhat; but we cannot avoid it entirely; we must submit to it.

So in regard to other evils which have been alluded to here. The subject of cows losing their calves has been discussed. The whole medical corps of the State of New York undertook to investigate it, and they came to no conclusion except this: that there are almost as many causes as there are localities and herds. A little musty hav: a sudden change from one kind of food to another; putting cattle from meadow hay on to good pasture in the spring of the year; half starving them to death in winter. I have been taken into many a stable in New England, where, with tears in their eyes, the unfortunate owners would show me half a dozen young cows that had lost their calves in the month of January, and for the simple reason that they had been reduced to such a condition by short feeding, that they had not vitality enough to hold the fœtus. A sudden change of wind. a thunder storm, a brutal, vicious blow by a herdsman, a single ugly cow in a herd, any sort of mental agitation will cause it. A cow is as susceptible as any other female animal to all these influences; and when abortion makes its appearance in a herd, no one can tell where it will end. And the remedy is as various as the cause. The cause can only be ascertained by careful observation by the farmer on his own farm. But uniformly good food,-proper food,-quiet, good judgment, and proper care and warmth, will generally carry a herd of cattle over most of these difficulties.

Mr. Root, of Barre. I desire to invite Mr. Ellsworth to state his method of preparing his butter for market. Dr. Loring, in his very sensible remarks, has alluded very pointedly to the deleterious effects upon butter caused by its transportation to market. I desire to invite Mr. Ellsworth to state his method of transporting butter from his home to market, which I believe is the most practicable and sensible method I have ever seen adopted.

Mr. Ellsworth. I have seen very much said in agricultural papers about butter and cream being taken into bad places. I have heard it said that cream, before it was taken off was more sensitive than butter, but I hardly think that is so. I will give my experience on that.

This was my first season of making butter. I have as good a butter room as I could arrange, but I found, after the weather became somewhat hot, that the sun struck upon one side of the building so that the boards were quite warm. I cut a large quantity of black and white birches, and placed them against two sides of my butter room, to prevent the sun from striking it. I have windows on all sides, and those were let down. This, you will remember, was in extremely hot weather; so much so, that I kept the windows open night and day, except in the middle of the day, when they were shut. It worked admirably, and I was very well pleased for a few days. But after the birches became wilted, one foggy, damp morning, as I passed into the butter room, I noticed that I smelt the birches very plainly. I thought the cream might partake of that flavor. I skimmed and tasted some of the cream, and true enough, the birch was there, and in the cream that adhered to the pan, I could taste it as plainly as you could if you chewed the twigs. I thought I was stuck, sure. I was making some 120 or 130 pounds a week at that time. We churned the butter as usual, and to my surprise, the buttermilk had that flavor, but I could not detect it in the butter. The butter came to Boston to Mr. Hovey, and I got my usual price. There was not a word said about anything wrong in that lot. That satisfied me that cream is not so sensitive as butter. I thought that was very good proof that the butter globules did not receive that odor, so that when they broke, the buttermilk took the flavor.

Now, in regard to transporting butter. My whole aim is to keep it from the air. I do not want any kind of air to reach it. If it is pure air, it will abstract the sweet flavor; if it is bad air, it will do harm, of course. I cover it from the air from the time it is salted until it is worked. Then it is boxed as soon as it can be, and covered. I have three different sizes of boxes. My shipping-box is something like an old-fashioned tool-chest, and holds four boxes of thirty pounds each. The shipping-box is two boxes high and two boxes wide. They are the common round butter boxes, but the shipping-box is a square box, with handles at each end. A rod comes up at each end, and there is a thumb-screw outside on the cover. Listing, such as comes on the sides of cloth, is tacked around the edge of the box. When the cover is screwed down, the box is pretty tight. You will

see that there is a vacant space between the two boxes, something like a three square. I had two galvanized iron boxes made, three square, or nearly so, that just fit into that cavity, and these are filled with broken ice, about the size of a hen's egg. These boxes are filled with ice, the butter put in, and the cover screwed down tight, about six o'clock in the morning, in hot weather. I meet the express train at West Brookfield at twenty minutes before eight, and my butter gets to the stall of Mr. Hovey at half-past eleven. Mr. Hovey says that two-thirds of the ice is in the boxes, and the butter, I have been told, is apparently as hard as when it started. I think if there had been a cross road direct to Salem, the Doctor could have got a little taste of my butter just as good as at home.

Dr. LORING. That is delivered where?

Mr. Ellsworth. To Mr. Hovey, in Faneuil Hall market.

Dr. LORING. Suppose the consumer lives at the South End?
Mr. Ellsworth. I am not responsible for it after it gets into

a middleman's hands.

Dr. Loring. There is where the difficulty comes in.

Mr. Ellsworth. The butter in that way comes into market perfectly sweet and fresh as it starts from home. I think any one can send butter in that way.

Mr. GOODMAN, of Lenox. This subject, it seems to me, is a very important one. I merely want to sum up a few ideas on the subject. I think my friend Dr. Loring states it rather too strongly when he says that all the bad qualities of the Jersey butter that comes to this market are owing to its having been transported. I have no doubt that butter is somewhat injured by transportation, and perhaps Jersey butter a little more than other kinds, through its richness, but I do not believe that is the main difficulty with Jersey butter or any butter. The great difficulty, it appears to me, is in butter making, and if this essey of Mr. Ellsworth could be distributed all through the country, among the farmers, we should get a great deal better butter than we do now. It is just as it is with bread-making. You cannot go into any family, even in New England, and find throughout the year uniformly good bread; and if you go West or South, you find it very bad. It is not because they have not good materials, but because there is no uniform system of making it. In Europe it is reduced to a system, so that it is always good.

You never find in Germany or France any such thing as poor bread. The reason is, that the thing is managed systematically. They understand of what materials it should be made, how it should be made, and when it should be made; and they know if it is not good, it is quite a loss to their pockets. The difficulty with our butter is, that it is made upon various systems, and until we get some method of making it as we do cheese, I do not believe that we shall have uniformly good butter; but, at the same time, by the distribution of such information as is contained in the essay, we shall have a great deal better butter.

We have in our region two prominent kinds of butter. We have good butter, and then we have what is called "Irish butter." It is called "Irish butter," because it is made, to a large extent, by those people,—very clever men, some of them are,—who are coming in and usurping the New England farms. They do not make the good butter that our American women used to make. That is brought to market and becomes "store butter," because the store-keepers mix up the various kinds of butter they receive in one tub, and so it is sold. That is miserable butter. While we are getting fifty or sixty cents for good butter, this ordinary butter cannot be sold for over fifteen or twenty cents.

Now, as to Jersey butter. It seems to me we ought not to be frightened by the idea conveyed by Mr. Hyde. I apprehend that it is well settled that for butter-making, there is no class of animals equal to Jersey cows. There is no class of animals that produce like from like as regularly as do the Jerseys, consistent butter-makers. I admit that there is no better class of animals in the world than the old native stock of New England. I have had in my dairy as good native animals in every respect, as any thoroughbred; but the difficulty is, that when you get a cow of that kind, she may have a dozen calves, and there will not be one that will be like the dam. Now, if you have a Jersey cow that is a good butter-maker, and you have a bull to match her, you are certain that her progeny will be like her. Why is it, if the Jerseys are not the best butter-makers, that their butter is commanding the highest price in our market? There may be bad butter from Jersey cows sent to this market; -bad, not because it is Jersey butter, but because it is badly made or badly transported. But is there any butter but Jersey butter

that is sent to New York, and sold for \$1.25 a pound; or seat from Berkshire County to Boston hotels and sold for 75 cents? Three-quarters at least of the butter that is sold in this city, in New York and Philadelphia, for from 75 cents to \$1.25 a pound, is Jersey butter, and I do not know that there is any other. That butter brings that price because it is well made. The gentleman who sends it from my region and gets 75 cents a pound has one of the best butter-making women I ever knew. His establishment is complete in every respect. His cows are regularly fed, and most important of all, they are well cared for, curried and cleaned, and their stable is in such a condition that those peculiar aromatic flavors which disgust gentlemen when found in butter, and which generally come from stables, are not intermixed with his butter.

I say, therefore, having tried the various breeds, having read about them and examined them, I do not believe that we shall find any better butter-makers than Jersey cows. But, sir, my main point in this matter is this: that what we want throughout the State is a more general dissemination of information as to how butter should be made, how cows should be fed, and particularly how they should be taken care of and cleaned. The gentlemen who come here know how their stables are kept. The most intelligent farmers generally come to this Board, and they almost all, after having been here, come to believe that the cows all through the country from which butter is made, are nicely and cleverly taken care of. But when you go through our rural districts, you will find that that is not the case; that in the majority of cases, the cows are so bedded, there is so much manure around them, so little attention is paid to cleaning them, when they are milked, that you cannot wonder the butter is poor. When you get the information of which I have spoken disseminated, and get a more uniform system of butter-making established, you will see a marked improvement in butter-making.

Mr. Allis, of Conway. I am acquainted with one fact which goes somewhat to show that the name or stamp upon butter, frequently goes a great way in the market. A gentleman from Berkshire County, by the name of White, some years ago, moved into York State, near Orange County, and kept a large dairy. He sent his butter to the Chicago market, to a gentleman who happened to be dealing in that article there,

with whom he was well acquainted. He lived so near Orange County that he thought he could venture to stamp it Orange County butter, and it sold at a very high price. He ran that farm some two or three years, and then went West. He thought he would get nearer his market, and moved into the vicinity of Chicago. Living so near he had not the face to mark his butter "Orange County," so he sent it to the same market in Mr. White's name. They said they did not want any of that mark; they did not want anything but Orange butter; they couldn't sell it. Seeing what the trouble was, he ventured to stamp his butter "Orange County," and he never had any difficulty after that in selling his butter.

On motion of Mr. Davis, of Plymouth, the subject was laid on the table.

Mr. Davis then moved that the matter of fixing the time for holding the shows of the Plymouth County, the Bristol Central and the Marshfield Societies be referred to a committee of three. Carried.

On motion of Mr. STOCKBRIDGE, it was voted that the same committee fix the time for holding the Deerfield Valley show.

The Chair appointed the following gentlemen as the committee: Messrs. Stockbridge, Hubbard and Phinney.

The report was then taken from the table and adopted, when the Board adjourned.

## FOURTH DAY.

The Board met at 10 o'clock, A. M., Mr. Peck in the chair. Present: Messrs. Allis, Boise, Brown, Bucklin, Clark, Converse, Davis, Fay, Fearing, Goodman, Hadwen, Hubbard, Hyde, Knowlton, Ladd, Leavitt, Loring, McElwain, Moore, Phinney, Root, Saltonstall, Slade, Stone, Stockbridge, Sturtevant and Wilder.

Mr. GOODMAN, on behalf of the Committee on the Assignment of Delegates, submitted the following:—

Essex, .			•				S. B. PHINNEY.
							J. F. C. HYDE.
Middlesex Non	th,		•			•	E. T. MILES.
Middlesex Sout	h,	•	•	•	•	•	RICHARD GOODMAN.
	-						GEORGE M. BAKER.

Wanasalan Wa									H. Converse.
Worcester We	•	•	•	•	•	•	•	•	
Worcester No.	•		•	•	•	•	•	•	J. LADD.
Worcester Not	rth-W	est,	•	•	•	•	•	•	E. W. Boiss.
Worcester Sou	th,	•	•		•			•	N. P. Brown.
Worcester Sou	th- $E$	ast,	•		•	•	•		R. H. LEAVITT.
Hampshire, Fr	ankli	n and	i Har	npder	١,	•	•		L. SALTONSTALL
Hampshire,	•		•			•	•	•	Jos. N. STURTEVANT.
Highland,			•	•				-	T. L. Allis.
Hampden,				•	•		•		LEVI STOCKBRIDGE
Hampden East	١,				. `				T. P. Root.
Union, .	•			•			•		F. F. FAT.
Franklin,					•				J. McElwain.
Deerfield Valle						•			W. Knowlton.
Berkshire,	•								E. STONE.
Housatonic,									A. P. PRCK.
Hoosac Valley			•			•			N. S. HUBBARD.
Norfolk, .	•	•	•	•	•				A. FEARING.
Bristol, .								•	M. P. WILDER.
Bristol Central				•				•	C. G. DAVIS.
Plymouth,	,	•	•		•	•	•	•	A. P. SLADE.
•	•	•	•	•	•	•	•	•	
Marshfield,		•	•	•	•	•	•	•	O. B. HADWEN.
Hingham,	•	•	•	•	•	•		•	G. B. Loring.
Barnstable,									A. M. MYRICE.
••	•		•						W. S. CLARK.
Martha's Vine	-						-	-	W. BIRNIE.
Manners Line	yuru,	•	•	•	•	•	•	•	W. DIKNIE.

The report was adopted and the assignment made accordingly. Mr. GOODMAN then submitted the following report on the

## AGRICULTURAL AND HORTICULTURAL EDUCATION FOR WOMEN.

Mrs. Cheney, in her address at the meeting of the Board at Fall River, has treated the subject of the horticultural education of women with such fulness and appositeness, that it may seem a work of supererogation, at least, for one of the masculine gender to attempt to glean the field over which she has traveled; but, perchance, as the topic at the head of this essay has been assigned to your Committee, it may not be presumptuous to attempt to enforce the views presented by Mrs. Cheney with a few considerations from a different stand-point.

M. De Tocqueville, the acutest observer of our institutions among the mass who have ventured to record their criticism on the democrats and democracy of America, compliments us by saying that our singular prosperity and growing strength is owing

mainly to the superiority of our women. It is worth while to consider for a moment in what that superiority consists, as germain to the subsequent inquiry whether it will be lessened by an education in provinces commonly considered to belong exclusively to man. This superiority may be sexual, or as contrasted with the condition and qualities of females of other countries, and it is the latter phase to which the political philosopher undoubtedly alludes. The right of woman to labor is common to the old and new continents, but women have not been, as a class, doomed to labor of a degrading or unsexual nature, under the free institutions of the United States, and no traveler from hence can record in his note-book, as Senator Wilson did in his, during his tour abroad last summer, of Ayr, in Scotland, that he saw seventeen women hoeing in a field, and a man, without a hoe, overseeing them!

No women are seen here, as in Germany, working with barrows on railroads, carrying coal, or mortar in a hod up a ladder to the tops of six-story buildings, nor, horribilé dictu! yoked with dogs, bulls and cows; nor is the hermaphrodite class, called by Count Gasparin "female men," yet common among us, though a few specimens occasionally crop out just to deter us from desiring or fostering their increase. In Europe, generally, the right of woman to labor is not only conceded, but the right of man to live in idleness upon the fruits of such labor is acquiesced in, and as shop-keeper, stall-tender, street-cleaner in France, outdoor laborer at all employments in Germany, Switzerland, South of Europe, and even in England, and also there as hotel-keeper, boarding-house and lodging-room tender, woman assumes the occupations of the other sex, and is substantially the head and support of the family, performing that daily toil for bread, which is man's inheritance, and which he cannot without infamy impose upon his helpmeet, thus compelling herto bear a double curse for the original sin of both.

We have not as yet confounded together the different characteristics of the sexes, making man and woman into beings not only equal but alike; much less have we turned women into inferior beings, fit only as companions for those whom she, equally with man, was created to rule over, but conceding her equality in the highest sense, we have admitted the wide differences between her physical and moral constitution and that of man, and

so apportioned the labors of life, that, whilst the outward affairs, the rough and hard work should fall upon the man, the domestic employments are peculiarly the province of the woman, and sufficiently engrossing to preclude her from a desire to travel beyond their limits; and consequently our females present that delicacy of manners and appearance, and strangers would not find it difficult, as among the Esquimaux, to distinguish the woman from the man. Of course exceptions occasionally form the rule, and we discern, yoked together, specimens of humanity showing sexual differences by the garb; but the grey mare is the better horse, and the domestic carriage, with its entire load, is carried along by the more spirited animal.

"The fact is," said one of these superior beings, "a man does not know how to straighten up things. He does not know where to commence. I don't wonder that when God made Adam, he went right to work and made a woman to tell him what to do!"

Physiology demonstrates that woman is not so constituted as to compete with man in physical labor, and the history of woman in all ages forces us to the conclusion that the qualities of her mind are different from that of man, leading her to resson intuitively, instead of plodding through logical arguments; consequently she is rarely a constructor or inventor, but her faculties are especially adapted to arranging and beautifying what is constructed, in assisting man in his improvements, but preserving in all she does her sexual significance, and her equality and independence, as neither sex can dispense with the other.

Will the education of women in agriculture and horticulture in any way interfere with this divine adjustment of the sexes! I trow not, for various reasons; the chief of which is, that the mere education in the theory of any employment, or even such practical application as may elucidate the theories, does not imply that the hard work, or actual labor, is to be performed by the neophyte. The vast businesses of our country are directed in the closet or the counting-room, and many of our successful agriculturists carry on a thriving employment without putting hand to plough, or any where except in the pocket; and the luxury of farming is not considered inconsistent with the

refinement or white-kiddedness of the most delicate of the male sex.

Warriors like Xenophon, philosophers like Cicero, statesmen like Burke, Washington and Jefferson, and poets like Horace, have combined the pursuits of agriculture with more engrossing cares, and if all could but describe themselves, as did the latter, Satis beatus unicis Sabinis,—

Completely blest
With a happy little Sabine nest,—

they reaped from the employment a wholesome recreation, and endorsed the worth of a business on which, more than any other, the fortunes of a country, moral, political or national, essentially depend.

Mrs. Adams, the wife of John Adams, whilst he was absent from his country as a joint commissioner to France, remained at home, and managed, as she had done during his necessary absences at the seat of government, the affairs of the household and the farm.

Rev. Henry Coleman, in his narrative of his agricultural tour in England, gives a fascinating account of a visit to a large estate, where the lady of the manor was the presiding genius, and herself conducted him through the cattle yards and pens, and showed an entire familiarity with the breeds and characteristics of the occupants; and Lady Pigot is known at the present time as one of the best breeders of Shorthorn cattle in England, rivaling in the prices she gives and obtains for her cattle the munificence of her British and American male competitors.

The best farm in England is reported as kept by a woman, and as having taken the first prize recently offered by the Royal Agricultural Society. It is a farm of 400 acres, devoted to pasture, grain and stock. Only four horses are kept, yet such was the admirable system of management, they were sufficient for the cultivation necessary for 70 acres of wheat, the same of barley and turnips, besides some oats and beans. The produce sold, was, 80 three year-old steers, and 200 fat sheep, all raised on the farm; 2,450 bushels of wheat, and 3,290 bushels of barley, which realized \$15,895, besides other produce, as pork, wool, butter, cheese, etc. Early in July the turnips nearly covered

the ground, and on 72 acres of them the examiners saw so weeds; in fact, the whole farm was perfectly free from them. Twenty tons of guano, bonedust, etc., were used each year.

These instances are sufficient to show that even agricultural pursuits may be prosecuted successfully without manual labor on the part of the owner, and without in any way detracting from the social position, or infringing upon the delicacy of either sex.

The history of nearly every patriotic State in the Union abounds in incidents of young women during the rebellion usurping ex necessitate the rights and privileges of the fathers, husbands or brothers who were at the front, and not only directing the operations of the farm, but carrying on the various processes in person, riding the machines, loading and unloading hay, hoeing and reaping; and the cases are not rare at the West of females now managing and cultivating farms as a pursuit more agreeable to them than indoor employments; and taking into consideration the machinery by which farming is now carried on, the comparatively slight amount of severe manual labor requisite, and which can be hired for the emergencies, these women farmers may find it a more satisfactory business than many trades followed by women, and the labor on the whole less severe.

"There appears," says Sir Humphrey Davy, "nothing more accidental than the sex of an infant. Yet take any great city of any province and you will find that the relation of males and females is unalterable." This dictum of the philosopher is substantially correct, and it is apparent that an uncirring intelligence so adjusts the balance of the sexes, that were it not for the wars and emigrations of man a helpmeet would be found for each of the male sex as for his great progenitor, and the sacred institution of the family would thus enfold the whole human race; and this being the normal condition, it is proper before deciding as to the effect of any class of education upon those abnormally situated to examine its appropriateness to the majority. It is conceded that the great need of women at the present time is a more substantial and domestic education. Personal adornment a century ago was the foible of both sexes, but the men have sacrificed mere show to substance and comfort, whilst the women, if any change has taken place, have rather increased their fondness for rich habiliments. Somewhat parallel to this

has been the education of males and females, the former striving for more practical knowledge, and the latter yet preferring the ornamental to the useful; and whilst our colleges for boys have added to the old curriculum many studies more directly bearing upon the arts of life, the schools for girls have continued showy and pretentious, and the best education our daughters obtain is that at home, where their moral and social nature receives the highest graces of vigor and refinement, and they are taught the domestic accomplishments appertaining to the due economy of the household. Primarily, the education of the man is, or should be, to prepare him to attain property, position and influence; that of the woman should be to prepare her to second his efforts by her understanding and advice and assistance, so far as it is within the scope of her ability, and does not trench upon her own peculiar duty, and also to prepare her for those duties. "To prepare us for complete living is the function which education has to discharge; and the only rational mode of judging of an educational course is to judge in what degree it discharges such function." Assuming, therefore, as we should, that every boy will become a husband and parent, and every girl a wife and mother, why should there be a parting of the ways when each leaves school, and why should the intellect of the male continue to be fostered and strengthened, whilst that of the female is neglected and her further education substantially abandoned? It is no answer to say that her endowments and adaptations are not the same intellectually as those of the male, because the same may be said of the bodily functions; and vet both sexes partake of the same sort of food, and our natures, which assimilate such provision according to the requirements of the system, will do the same with the mental pabulum. Even the advocates of the origin or improvement of species by artificial methods do not carry their theories so far as to assert that any changes can be permanently made in the distinctive attributes of the sex; that among the feathered songsters of the grove the music shall issue from the throat of the female instead of the male; that the brilliant plumage shall, as among bipeds of the human race, be the peculiarity of the feminine gender, or that any style of feeding or natural selection can give vocal charms to the dumb wives of the grasshoppers. Neither will education alter the natures of man or woman as

the complement of each other; but he will retain his stirring, practical, inventive and mechanical faculties, and she her intuitive affinities for the true, the beautiful, and the good; and the great benefit of an equal education will be to them, that the wife can more understandingly employ her divine faculty of counsel, her all-pervading influence; and the husband when discouraged by ill success, or unable from his own suggestions to solve the difficulties of the problem of life, may, from her more spiritual perception, receive suggestions which shall enable him to see his way clear. But the great glory of the woman as a thing distinct from that of the man, is her maternity; her great privilege of nourishing and educating the human race; for the early education which the child gets at home is the planting of the seed which springs up under all circumstances, and though crowded out for a time by other vegetation, will through life show itself like those bushes and trees which start up after the depuding of forest lands by the axe or fire; sometimes mere brambles and worthless brush, more often of great lasting value. What more lamentable sight than that of a young mother unfolding a human character committed to her charge, whilst she herself is profoundly ignorant of the phenomena with which she has to deal, knowing nothing of her own, much less of the child's functions, ignorant of the effects that will be produced by this or that treatment, and proceeding with the management of this wonderful specimen of God's handiwork in much the same manner as a quack doctor with his patient, trying all things and in many cases finding the surest remedy for all ills in the churchyard mould?

It was a witty and handsome jeer which Aristippus bestowed on a sottish father, by whom being asked what he would take to teach his child, he answered, A thousand drachmas; whereupon the other crying out, O Hercules! how much out of the way do you ask! for I can buy a slave at that rate. Do, then, said the philosopher, and thou shalt instead of one, purchase two slaves for thy money; him that thou buyest for one and thy son for another. Somewhat after this manner is the husband sold who obtains for the mother of his children a wife without education, and intrusts to her care and almost exclusive attention, their destinies during adolescence, and does it not follow that if a good mental and moral training is necessary for the male adult in

after-life it is equally necessary for the female adjunct? and if the last stage in the mental development of each man and woman is to be reached only through the proper discharge of the parental duties, there should be equal preparation for the performance of such obligations.

But, after all, these arguments might have been considered necessary in the eighteenth century when, if the incisive pen of Lady Mary Wortley Montague indites the truth, men debarred her sex from the advantages of learning, fancying that the improvement of their understandings would only furnish them with the more art to deceive the male sex, and because the males flattered themselves that the females were really of inferior rank; and the Lady Mary was persuaded that if there was a commonwealth of rational horses (as Dean Swift has supposed), it would be an established maxim with them, following · the cue of their masters, that a mare could not be taught to pace! In the nineteenth century we have progressed far beyond this, and whatever differences of opinion there may be as to woman's right to vote, and the propriety of her taking part in public affairs, the majority of intelligent male citizens are agreed in opinion that women are by natural right entitled to all the advantages of education enjoyed by men, and that whatever difference there may be in the faculty of production, in the faculty of acquiring knowledge there is no difference between the feminine and the masculine mind.

"On the cultivation of the minds of women depends the wisdom of men," said Sheridan. "The future destiny of the child is always the work of the mother," said Napoleon. And evenfor her own sake, woman is as much entitled to an education as her brother, for no entertainment is so cheap as reading and study, no pleasure so lasting, nothing so moderates the passions, nor teaches one to be contented at so small an expense as knowledge; and though the ultimate end of the education of a woman is to make her a good wife and mother, it will have the effect of rendering a virgin state happy, and as in the one case it will not interfere with the indispensable requisite of every American wife and mother to know how to order and regulate the family, how to govern the domestics and train up her children, but rather insure a more wise judgment in those prerogatives, so in the other case, a proficiency in letters will not detract from the

mildness, humility or modesty of the maiden, but add to her pleasure, contentment and usefuluess.

Applying these self-evident truths to the subjects of this essay, and realizing that the study of agriculture comprehends a knowledge to be acquired of all the sciences, that there is scarcely a branch of science it is not necessary a man should possess to be a successful farmer, we can see every reason why the women who are to be the farmers' helpmeets should pursue the same studies that he does, and thus retain through life their intellectual equality, and be the better able to cooperate with the husbands in scientific agriculture, by judicious and understanding advice and suggestion, and implant in the young minds of the coming generations that love for a study of their calling which will develop it among the foremost sciences, and carry it forward to a point of progress and pecuniary success undreami of by their fathers. Even those persons of experience in training youth, who have laid out a curriculum of studies to be pursued in the education of women, embrace within it nearly all those pursued at the Agricultural College of this State, claiming that for them "the female mind possessess peculiar aptitude, as the faculty of observation is more readily developed in women than in men, and they possess in a greater degree the genius of manipulation."\*

"My dear, will you play your thousand dollar polka?" said a farmer to his charming daughter, six months after her return from a fashionable boarding school. The young lady's musical performances had dwindled piece by piece to a solitary polka, and the fond parent's sole compensation for his many years' outlay was the precious "thousand dollar polka." The same amount of time and money expended on the education of a farmer's daughter at an agricultural college, would produce more permanent results, and fond parents would not have to grieve, as the custom now is, over the misappropriation of their hard earnings.

If the United States is the land of modern chivalry where the moral qualities of woman are most highly valued, and her station in society fully acknowledged, and if, as M. de Tocqueville asserts, our advancement in prosperity and civilization is owing largely

<sup>\*</sup> Dr. Hedge in a late address on the Education of Women.

to the superior character of the female sex, we can only retain this high eminence by constantly enlarging their intellectual sphere contemporaneously with that of the other sex.

And whilst we have no fear that there will be any such reversion to barbarism as the compulsion of American women in any class to perform the rough labor of the fields, there is a wellgrounded distrust that unless the future mothers of our agriculturists take a higher view of the calling of their husbands and sons, the latter may not pursue it with the ambition and knowledge requisite to its complete success. But if they are instructed in the arts of agriculture and its kindred sciences, we may hope to see our farmers' wives cooperating with their hus bands in the management of the farm, and instructing their sons in the elements of that scientific knowledge which will give such a different hue to their employment; whilst to themselves untold benefits will accrue from the substitution of useful knowledge and subjects of mental investigation for the idleness, sauntering gossip, frivolous reading and other modern female dissipations; and even the coarse and common things—the meat, drink and household cares-will be elevated by the different spirit in which they are ministered by the educated woman.

R. GOODMAN,

For the Committee.

The Report was accepted.

Mr. STONE, from the committee appointed to consider the report upon the time and place of holding the country meeting of the Board, reported in favor of holding it at Barre on the 12th, 13th, and 14th of November.

Mr. STOCKBRIDGE objected to this time as it would bring the meeting in term time at the Massachusetts Agricultural College.

Mr. CLARK then advocated holding the meeting on the 3d, 4th, and 5th days of December. This amendment having been carried the report as amended was adopted.

Voted, That Hon. Marshall P. Wilder and the Secretary be appointed delegates from the State Board to the Convention called by the Commissioner of Agriculture, to be held at Washington on the 15th inst.

Mr. GOODMAN then submitted the Report of the Committee appointed to consider and suggest a list of subjects for investigation and essays, as follows:—

Field and Garden Seeds.—Messrs. Moore, Hyde and Wilder. Cultivation and use of Forest Trees.—Messrs. Clark, Stone and Durfee.

The use of Steam on the Farm.—Messrs. Stockbridge, Hadwen and Fay.

The relative value of Farming among the occupations of Life.

—Messrs. Hubbard, Slade and Sturtevant.

The importance of providing other Food for Cattle than Pasturage.—Messrs Goodman, McElwain and Root.

This Report was adopted.

Voted, To appoint a Committee to make arrangements for the meeting at Barre.

Messrs. Root, Hadwen, Hubbard, Fay and the Secretary.

Mr. STOCKBRIDGE then presented the following paper upon the

## AGRICULTURE OF EASTERN HAMPSHIRE.

Although the Hampshire County Agricultural Society is not limited by statute to any particular territory, and has efficient members, receives contributions, and dispenses premiums without regard to county lines, the real field of its operations is in Eastern Hampshire, and comprises the ten towns of Hadley, South Hadley, Amherst, Granby, Pelham, Belchertown, Enfield. Prescott, Ware and Greenwich. The country is drained by the Connecticut River and its tributaries, and has a slope to the west and south-west. Its elevation above tide-water is from six to seven hundred feet. Much of the surface is broken and hilly, and it has mountain ranges running north and south. The general mountain line is intersected by the Holyoke range, running east and west, some of whose most prominent points are between eleven and twelve hundred feet in height. It embraces an area of 113,893 square acres, and contains a population of 19,447, who are almost exclusively engaged in agriculture. It has but two manufacturing villages of any size or note; South

Hadley Falls and Ware Village. The geological formation of the region is principally gneiss, but sandstone and trap exist to a limited extent. The general character of the soil is drift composed of the abraded materials of the granite, slate and limestone rocks of Franklin County and Vermont. This debris has been sorted by water currents and specific gravity, so that we have distinctive soils, of clay, sand and gravel, and soils of varying characteristics of which some one of these substances is the predominating base. Along the streams, but especially bordering the Connecticut in Hadley and South Hadley, are more recent deposits of alluvial soil which form extensive meadows of great and enduring fertility.

The aborigines had settlements on the streams, their hunting grounds were the adjacent hills, but they cultivated the river bottom quite extensively with corn, and so important did they consider this cultivation, that when they deeded it to the settlers, sixteen acres were set apart and described by metes and bounds. which they were to have to grow corn upon four years, during which time they were to prepare other corn lands farther up the The first settlement of whites was made here in the year 1658. The land was honestly purchased of the Indians, honestly paid for, and was conveyed by deed in due form, and recorded. The settlement was at the place now known as West Street in Hadley, but the township embraced nearly all the territory now included in the towns of Hadley, Hatfield, Amherst, South Hadley, Granby, Pelham and Belchertown. The outlying lands of the purchase were taken up and settled upon soon after, but the Indian war stopped all expansion and drove the settlers into the stockade or to the adjoining lands, to remain until peace was secured by the practical extermination of the Indians. Within fifty years of the first settlement at Hadley, nearly the whole territory of the ten towns was occupied by settlers. All that portion of the country lying east and south of what is now the town of Amherst, was originally covered with a dense forest, principally of hard wood, though the various varieties of pine were not uncommon. West of the line spoken of. to Connecticut River, there was very little forest, though much of it became wooded within a hundred years from the first settlement. The settlers were exclusively farmers and at once commenced agricultural operations, so that our lands have to a

greater or less extent been under cultivation for a period of about one hundred and seventy years. This cultivation at first was very rude, and in consequence of the circumstances of the people, was a struggle to wring subsistence from the soil without any regard to the preservation of its fertility. Necessity at first compelled to this course, but although the pecuniary condition of the farmers was soon much improved, but little change was made in their system of cultivation for a hundred years. Their staple products were wheat, rye, corn and cattle. In the wooded portion of the country the dense forests were felled, and most of them burned on the land, after which, with very poor cultivation, it for several years annually produced crops of grain of from thirty to forty bushels per acre. A large proportion of these lands, which from their rocky or precipitous character it was difficult to cultivate, were then devoted to the growing of stock and the feeding of milch cows. Other lands which could be readily ploughed, were, from father to son for generations, kept under triennial rotation with cattle or sheep, and grain, two years in pasture, and one in grain, blindly trusting in Providence, and their sheep, to keep up the land while they sent all its products away. After the settlers had become secure in their possessions, and prosperous, large quantities of their grain products were transported down the river to Hartford and across the country to Boston and thence to a foreign market. They always sent to market large numbers of cattle, and eventually dairy products, but during the first fifty years of the present century kept most of their grain at home, using it to stall-feed cattle. At different times their system of cultivation has been varied by the introduction of other crops. Flax was cultivated early and for a long time, and hemp and teazles have been grown to some extent. About the commencement of the present century began the cultivation of broom corn, both as a money crop to be sold and to produce stock feed. Its cultivation was profitable, and as its seed and stalks were left, it was not exhausting to the land. With the exception of hay it was the leading crop from 1830 to 1850, and was largely cultivated several years later. In 1855 the town of Hadley cultivated about a thousand · acres of broom corn, but in 1865 it had decreased to less than one hundred, and at the present time its cultivation has practically ceased. The causes which led to a cessation of this business were its extensive cultivation at the West, and the introduction of the more profitable culture of tobacco which began about 1850, and has been continually increasing to the present time. In 1855 the towns of Hadley, South Hadley, Amherst and Granby, cultivated sixty-eight acres of this plant, but in 1865 its growth had extended to all the ten towns named, and they had nine hundred and forty-three acres in tobacco. It is the universal opinion of that community that its growth has increased since that time, but the statistics of 1870 give us but nine hundred and twenty acres devoted to its cultivation.

In selecting farm lands in this section, the original settlers took first the highlands which were heavily wooded and had a dry soil, and then dry alluvial and the lighter class of sandy loams. The former after yielding a few crops of the smaller grains by indifferent cultivation, were devoted almost exclusively to grazing, and the latter from father to son were kept under cultivation to grain with partial rest from time to time by the growth of grass. For more than a hundred years these were the only kinds of soil used, and generally without any systematic rotation of crops, or any effective plan for preserving its fer-When it materially deteriorated new resources were supplied by clearing and using forest lands, but only in modern times has there been any attempt to bring to the wants of husbandry the low, wet lands where are accumulated choice elements of fertility gathered from the adjacent country. The general system of cultivation pursued has gradually deteriorated the producing power of the soil. Some whole farms, and a very few acres on many farms having received special attention still yield crops as of yore, but as a rule Indian corn decreased from sixty to twenty-seven bushels per acre; rye from thirty-five to nine; wheat, which produced from thirty to forty bushels, is not grown except as a rare and pet crop. Hay fell from two to one ton per acre, and pasture which once carried a cow to two acres, required five acres to the cow, or it ceased to produce grass at all. Although a portion of this territory, which at its first settlement was cleared land and was afterwards permitted to produce forest, yet as a general rule the forest lands have been simply devastated. For more than a century the wood had little or no value, and it was swept away to make farms, or to get new rich land when the old failed, but in modern times the process

has been hastened by the great value of forest products. Until within the last twenty years, this forest clearing was followed by fire, the drag and grain to enhance the profits. During the last two decades land owners have been more provident, and to considerable extent, forest clearings have not been burned, and the land has been allowed again to produce wood, though without special care or culture. Much land also, in rocky, precipitous, exposed localities, which had been burned for grain after taking off the forest, from necessity, has been devoted to growing wood, so that our woodlands are now increasing, and there is a hopeful prospect that ere long our hills and mountains will be covered with forest. In 1865 these towns had 17,974 acres of woodland; in 1870 they had 21,586 acres. But though there has been a good increase of the number of acres there has been none in the cords of standing wood, and another decade of the present practice will be needed to produce that result. The value of our forest products now annually sent to market is about \$100,-000. Although much of the area of these towns has special adaptations for the production of the cereals, yet stock husbandry, the production of beef and dairy products, has always been an important pursuit. The records do not state the fact, but there is the best reason for believing that the first emigrants to our oldest town (Hadley) brought neat stock, sheep and swine with them. The compact which was drawn up and signed just before they emigrated, by the "proprietors" who purchased the land, stipulated that each proprietor besides his "house lot," should have the right to put cattle in the "cow pasture." And very soon after the settlement, in adjusting their relations with the Indians, it was agreed on their part, that the Indians should have the right to hunt and fish on their unoccupied lands. and the Indians agreed that they "would not let down the fences of the inhabitants, or let the cattle and swine upon their fields, nor hunt or kill any cattle, sheep or swine with their dogs." As the settlers were from Connecticut, where they had traded much with the Dutch at Manhattan Island, and with the colonists in Delaware and Virginfa, it is more than probable, that our first cattle were of Dutch and English origin, though the large number of yellow and brindle cattle in their progeny indicates that they after a time became mixed with the Danish importations to New Hampshire. During the latter part of the

last century some of the towns were noted for their extensive dairies, and up to the present time others are famous for the quality and number of their stall-fed cattle. Until within the last thirty years no systematic efforts were made for the better breeding or improvement of the neat stock. About that time Paoli Lathrop, Esq., of South Hadley, introduced the Shorthorns, and by skill and attention to the business he was so successful as to become known throughout the country as one of its best breeders. Others followed his lead and the blood of the breed was quite widely disseminated, producing so marked a change in the quality of our cattle, that in some sections a beeve at three years was as heavy as under the old order of things at four. Our agricultural society has endeavored to encourage the work of improvement, by offering large premiums for thoroughbred stock, and by introducing bulls and granting their use to the farmers. At the present time we have purebred animals of the Shorthorn, Ayrshire, Jersey and Devon breeds, and an infusion of their blood in our grades. doubtful whether we have so many cattle on our territory now as we had seventy-five years ago. Our farmers, to a great extent, have ceased to grow cattle for beef or work, and give their attention to dairy animals, but they are decreasing in number. The earliest statistics to which I have had access, show that excluding swine, the ten towns had in 1855, 17,399 domestic animals; in 1865, 18,731; and in 1870, 15,640. The number of horses in 1855, were 2,408; in 1865, 2,782; in 1870, 2,012. The working oxen in 1855 were 1,883; in 1865, 1,197; in 1870, 1,097. These figures show that while horses have decreased 896 in fifteen years, working oxen have decreased 786. Horses have been substituted for oxen as the working teams of our farms to a much greater extent than the figures would indicate. Formerly horses were kept for driving and breeding purposes; now but little comparatively is done in breeding, many of our horses come from abroad, and four-fifths of our farm work is done with horse teams.

For thirty years there has been a gradual decrease in the number of sheep reared and kept by our farmers, though stimulated at times by the high price of wool, there is a temporary increase. They are kept more for the sale of early lambs than for wool, and many thousands bought abroad are stall-fed here, which

are not returned in any statistics. The number of sheep in 1855 was 4,400, but in 1865 they had increased to 6,941, owing undoubtedly to the great increase of wool caused by the war, but the subsequent depression of the woollen trade caused their decline in 1870 to 3,477, or 923 less than in 1855.

The amount of hay produced in 1855, was 22,764 tons, but in 1870, it was 28,501. The statement has been made that the farm lands of this section of the State have materially deteriorated in fertility from their original condition, and the statistics show the kind and amount of decrease of farm products within fifteen years. There has been a material falling off in aggregate number of all domestic animals but horses and cows, and of all products but hay, dairy products and tobacco. The showing thus far, is a general break-down in the industry of agriculture, apparently a continued depreciation of soil, decrease of crops in consequence, and impoverishment of the farmer. Yet the fact is indisputable and beyond a doubt, that the agricultural community of Eastern Hampshire were never in so good condition as to-day. They have better houses and barns, better tools and implements, possess more of life's comforts and luxuries, are less encumbered with debt, have more absolute leisure, and do not tax their physical energies with such exhaustive labor as did their fathers fifty or one hundred years ago. We make more money from our farms, enjoy the spending of more, and keep more than did they. We get greater pay for our actual labor, and a larger per cent. on our money invested in the business than did they. These facts will be proved by other equally reliable statistics.

The entire capital invested in the business of agriculture in the ten eastern towns of Hampshire at the present time, in domestic stock of all kinds, in tools, implements and vehicles, and real estate, including all farm buildings, unimproved and unimprovable land, is \$6,386,277. The entire cost of labor, including board, to work this capital, in 1870, was \$442,724. Grant that all the other expenses of the business are equal to the cost of labor and board (but they are much less) and the whole cost of carrying on the business was, \$885,448. The income from all expenses and capital in 1870, including betterments and increase of stock, but excluding the value of the annual growth of wood, was \$1,660,828. Deducting the cost of

production, \$885,448, we have a profit of \$775,380, which is more than twelve per cent. on the capital invested. The marked deterioration of our farms, and their diminished yield was at its lowest point from 1840 to 1855. Between these periods the rapid increase of our manufactures of all kinds, the development of our railway system, the increase of branches of business, drew large numbers of our farmers from the land to engage in other pursuits, so that the number of men engaged in farming was very materially decreased from 1845 to 1860. The stimulus given to other pursuits during these years, and the increased population deriving their support therefrom, called for larger supplies of agricultural products, and materially enhanced the price of some.

Between 1855 and 1865, our farmers found themselves in the dilemma of being called on for an increased amount of their products at enhanced prices, with an inability for the want of labor to meet the demand, and they were wise in their generation, and applied the labor they had to less acres, cultivated more thoroughly, and produced such products as the markets to which they had easy access demanded. Here our real improvement began, and the statistics show the suddenness and the success of the change.

In 1855 we had 5,259 milch cows; in 1865, 4,896; and in 1870, 4,830. In 1855 we sold 456,272 pounds of butter, and 253.969 pounds of cheese. The value of the butter and cheese sold was \$116,182. At that time our farmers sold very little milk. In 1865 we sold 213,209 pounds of butter, 158,245 pounds of cheese, and 110,240 gallons of milk, the whole value being \$103,709. In 1870 we sold 502,753 pounds of butter. 106,241 pounds of cheese, and 206,967 gallons of milk, the whole value being \$266,709, or more than double the value of the product of 1855. In 1855 we had 25,684 acres in mowing, which produced 22,764 tons of hay, or about 1,700 pounds per acre. In 1870 we mowed 23,970 acres, which yielded 28,501 tons, or 5,737 tons more than in 1855, averaging about 2,400 pounds per acre. The proportion of "wet swale" mowing was much less in the latter than the former period. There were 5,831 acres in Indian corn in 1855, which produced 167,099 bushels, averaging about 28 bushels per acre. In 1870, 2,605 acres, which produced 100,706 bushels, or about 38 bushels per acre. Of rye, we had in 1855, 4,668 acres, producing 42,930 bushels, or about nine bushels per acre. In 1870 we had 854 acres, producing 26,126 bushels, or about 30 bushels per acre. We cultivated 1,787 acres of potatoes in 1855, which yielded 151,326 bushels, or 84 bushels per acre. In 1870 we had 1,450 acres, producing 129,468 bushels, or 89 bushels per acre. The value of all our farm products, with the exception of slaughtered meat was in 1855, \$1,059,921; in 1870, \$1,410,253, or an excess in 1870 of \$350,382.

These statistics indicate pretty clearly the course of our agriculture, its progress and present condition, and it only remains to consider whether the system is the best for our circumstances, and what should be done to make it more prosperous and remunerative. The marked features of the exhibit are, that we farm many less acres than formerly, have decreased materially in the product of all the cereals, and that the bread grains, rye and wheat especially, are insignificant in amount. In fact it is undoubtedly true that our farmers do not produce so much grain as they consume. Many of them who stall feed numbers of cattle, or have their barns full of milch cows in winter, feed them freely on grain, all of which is purchased from abroad. In consequence of existing circumstances, the special demands of the markets to which we have easiest and cheapest access. the system of cultivation to which our soil has long been subjected, and its present condition, this course commends itself to my best judgment.

To make grain and export it as a market product, is to send away the choicest mineral elements of the soil, those which are very slow to develop, and which it is difficult and costly to supply. To raise large crops of hay, and feed it in conjunction with foreign 'grain, and send away principally carbon, in the form of fat and butter, is certainly best for the land, and in consequence of the character of our markets, and the cost of cultivating grain the best for the pocket. The results of this course are a sufficient commendation, as they show a gradual increase per acre of our leading crops.

The change in our agriculture within fifteen years is encouraging. We have, however, not only begun to set back the tide of depreciation, but commenced to ascend the steep of improvement, our progress in which, it seems to me, might be acceler-

ated by a change in the character of the lands we use, by a greater variety in the crops we cultivate, and a more constant attention to the effect on the soil of change in plant production. As a general rule, from the first settlement to the present time, the lands which have been most sought for and prized for cultivation, have been the alluvial, the dry plains and slopes, and the hills. Wet lands, not simply swamps, but those made sterile, or producing nearly worthless plants, in consequence of want of draining, though rich in all the elements of fertility, have been almost universally rejected for cultivation. Our agricultural society continually offers premiums for reclaiming these lands, and sometimes has them to pay, yet the great mass of our farmers are indifferent to improvement in this direction. Necessity has compelled to the abandonment of some of the former class of lands, but now, as a wise and intelligent system of management, thousands of acres of this area should be planted or allowed to go to forest, and judiciously cared for as such. It would be a profitable operation in itself, and have a beneficial influence on the lands in cultivation. This loss of land for any of the objects of agriculture, would be more than compensated by systematic, intelligent labor, directed to bring. ing our wet, water-poisoned lands into a condition for the production of all crops by draining. In some localities it would be better for a farmer to emigrate, and buy dry land for his tillage rather than to drain, but our circumstances are such that we can afford to drain; in fact, we cannot afford to do otherwise.

The average value of all our farm lands in 1870,—the good, bad and indifferent,—was \$49 per acre. But good lands for cultivation are worth from \$1 to \$300 per acre. We have thousands of acres now practically useless for cultivation, which if underdrained at an expense of \$75 per acre, would be as good for every crop we grow as our best tillage lands. When our farmers make these changes in the lands they cultivate, it will be a long stride in the march of improvement.

That standard fruit, the apple, is cultivated by us to a fair extent, but pears and the small fruits, as market products, are almost unknown. We have good markets for such crops within easy reach, but do not supply them; but, on the other hand, our people, farmers and all, make a market by consuming these fruits of foreign production. Our soil and climate are adapted

to such products; their cultivation has commenced on a limited scale, and it could be enlarged to our health and profit.

The returns of 1870 do not give us credit for the cultivation of any root crops, and they do no special wrong, for our State returns of 1865 tell us that in that year of beets, turnips and carrots we had but sixty-eight acres, and pretty careful observation indicates that they have not materially increased since.

The system of carrying stock through the winter on a diet exclusively of dry hay and grain is, to say the least, one of very doubtful expediency and profit, and the introduction of roots, mangolds, Swedes, or carrots, as a crop for stock feed, would increase our crop variety, change our rotation, enable us to keep larger herds and in better condition, improve the physical condition of our soil, and increase the material for its fertilization.

In making suggestions for the improvement of the agriculture of Eastern Hampshire, we should keep continually in mind that tobacco is, and perhaps is to be, the leading crop next to hay, and on account of the ease, certainty and despatch with which it is converted into money, it is better even than that. The change, therefore, must be one which, if it lessen the cultivation of tobacco, will make a corresponding return of cash, either in ready cash, or the improvement of the lands. Now, tobacco feeds enormously from the soil, but it makes no stock feed; it leaves nothing on the farm to compensate for the draft it makes. The fertilizing elements must be returned from other sources. In view of these facts, a desirable improvement would be the introduction of some really profitable crop, which would thrive on the soil elements which the tobacco does not consume, which would materially aid in sustaining the stock of the farm, and making manure to support its fertility.

Most careful, searching inquiry and examination at home and abroad, and through experiments tried on our own territory, at the Agricultural College, seem to indicate beyond a reasonable doubt, that the introduction of the sugar beet as a crop, and its use as stock feed, or as a fertilizer, after its saccharine matter has been manufactured into sugar, would accomplish this desirable object. This culture seems to be required by the fact that there is an enormous and rapidly increasing demand for

its products, while supplies from the usual sources are continually diminishing.

In 1871, after consuming the products of our Southern canefields, we imported and used \$100,000,000 worth of sugar. That year Massachusetts used \$5,000,000, and the consumption is increasing at the rate of fifteen per cent. a year. The culture can be introduced, not really as an experiment, but as a permanent business, all the difficulties of which have been solved most satisfactorily.

At the present time forty per cent. of all the sugar made in the world is from the sugar beet, and in the temperate zone. In 1871, France produced 800,000 tons of beet sugar, and the eash value of its beet products was more than \$50,000,000. Those districts of the country which produced the most sugar, also produced more grain and beef than any others, and vastly more than they did before the introduction of this industry. This the farmers and manufacturers of France have accomplished under very depressing circumstances, for the government collects a tax of nearly four cents a pound on the sugar, and draws an annual revenue from the beet crop of \$16,000,000.

Germany has met with equal success in this culture, and it is commencing with highly flattering propects in Russia and England.

The universal testimony is, that besides the value of its manufactured product, it is an invaluable adjunct to improvement in every other branch of agriculture.

To produce the beet successfully and of sufficient sweetness, in a measure compels to a correct system of agriculture, which results in the increased fertility of the soil and largely augmented products of all other kinds. The soil and climate at Amherst produces as sweet a beet as that of France or Germany, and sugar in every respect as perfect as any ever produced in the tropics. What the culture of the beet has done for France it may do for the Connecticut Valley, giving greater variety to our productions, making a profitable crop, and aiding to counteract the results of our present culture.

Tobacco requires large quantities of manure, rich in every element of plant-food, but especially in nitrogenous matters. The sugar beet will not bear nitrogenous food, and would follow tobacco with a very slight addition of some mineral element.

Its action on the soil will be to prepare it for subsequent crops, and after the sugar is extracted it will furnish as much stock feed as an acre of hay, and to keep more stock and make more manure.

At the present time our farmers purchase enormous quantities of fertilizers. They transport manure by rail long distances, much of it from beyond the Hudson, at an expense of from \$10 to \$15 per cord. Peruvian guano and the manufactured phosphates are much used, and ashes when they can be obtained. With the changes indicated in the soil to be cultivated, the increase in the variety of our crops, the adoption of a more rational rotation, and the influx of such quantities of fertilizing materials, we can have reason to believe that our agriculture will be abundantly prosperous; that although our cultivated acres may not increase, yet their aggregate products will be greatly enhanced, yielding still larger and more satisfactory profits to our cultivators.

LEVI STOCKBRIDGE.

The paper was accepted and ordered to be printed.

Dr. Loring then submitted a report as delegate to the Deerfield Valley Agricultural Society.

The various reports of the Delegates and of Committees on essays not previously acted upon, were then taken from the table, read a second time by their titles and adopted.

Voted, That any unfinished business be referred to the Committee on Printing, with full power.

The Board then adjourned.

SECOND ANNUAL REPORT ON THE INJURIOUS AND BENE-FICIAL INSECTS OF MASSACHUSETTS.

BY A. S. PACKARD, JR., M. D.

The past year has been marked by the unusual abundance of two insects which have preved on our field crops. Both are comparatively strangers in this State, and illustrate the law that new enemies of our crops make their appearance from year to year most unexpectedly, and do a large amount of damage before their presence has been generally known or often even suspected. And this probably will always continue to be the case. While the newly settled parts of the country are peculiarly exposed to the ravages of insects, after the lapse of a few years the equilibrium seems in a measure to be restored, and average crops can be raised. But still, here in New England, where the country has been settled over two hundred years, we are occasionally disturbed by the abnormal increase in the numbers of kinds of insects usually not abundant. This is primarily due to variations in our seasons, but from the scarcity of insectivorous birds which fail to come to our aid in these times of extremity, the insects remain in undiminished numbers and accomplish their work of devastation without let or hindrance. This will probably always be the case, so long as the most obvious principles of economic entomology remain unapplied.

In England, where the arable land has been cultivated for over a thousand years, Mr. Curtis, the author of "Farm Insects," complains that in economic entomology "every season brings forth fresh subjects for investigation, and although this arises in a great measure from the neglect which has attended this important department of natural history, it seems as if a cycle were revolving, which exhibits species previously unobserved, at intervals of greater or less extent; and whether regular or irregular cannot be determined for want of data; rare and unnoticed species, no doubt, become abundant or scarce by changes of temperature; certain and continued currents of air, a want of food in their accustomed localities, and similar phenomena may also change the regular course and geographical distribution of insects for a season; so that enemies to the cultivator may suddenly become great annoyances in latitudes where they had been previously unknown; and may there remain until a counter-action takes place, either of climate or of parasitic agency, which at once sweeps away the plagues and releases us from those great armies which are employed by the Power who created them."

We may be allowed to glance for a moment at the attention paid in Europe to practical entomology. The plant louse, (Phylloxera vitifoliæ,) affecting the grape-vine to such a fearful extent in France, and which in this country has done considerable mischief, is still attracting much attention. Within a year past as we learn from the "Revue Scientifique," the French Academy has offered a prize of twenty thousand francs to encourage studies with the view to ascertain a remedy which shall protect the vine without destroying it, as some of the remedies proposed killed the vine as well as the noxious insects. The French Government has always been alert and liberal in this matter of economical or applied entomology, a subject more important to agriculture than is yet dreamed of in this country, where it is estimated that we lose hundreds of millions of dollars annually from the attacks of injurious insects and plants.

During the past summer the losses of wheat, corn and other crops in the Western States have been enormous. The onion crop raisers in one county (Essex) alone in this State have lost, it is estimated, at least from ten to fifteen thousand dollars' worth of perhaps the most valuable crop next to the hay crop, from the attacks of a minute insect called Thrips. This annual loss, much of which by timely exertion, and especially the cultivation of insect parasites, could be avoided, will accumulate in intensity, and become a grievous burden a century hence, when our country will be more densely populated and every grain of food will be needed; unless more attention than is now thought necessary be given to the subject.

The foresight of the French people, despite the present gloomy views of their journals over the decadence of science among them, is conspicuous in their prompt and scientific treatment of the silk-worm disease (pebrine). This is a disease that has already extinguished a most promising experiment in the rearing of our native silk-worm, as Mr. L. Trouvelot of East Medford, who had proved the ease with which our native silk-worm may be reared, unfortunately lost several thousand dollars' worth of them by this disease, imported accidentally in eggs of the Yama-mai moth

received from Japan via Paris, where they must have been inocculated with the germs of this much-dreaded insect plague.

Pasteur and Quatrefages, and others whose names are illustrious as investigators, have been commissioned by the French Government to study the causes of this disease, and it now thought, that, following out the suggestions M. Pasteur-the result of profound studies on this subject-if healthy eggs be selected by aid of the microscope, and those infested with the parasitic fungus be destroyed, silk culture will be again restored in France and Southern Europe. As the result, a single silk raiser, whose worms this year will produce 32,000 ounces of eggs, hopes next year to have 100,000 ounces, and the prospect of a profit of a million of dollars! It should be remembered that this remarkable result is due, primarily, to the most abstruse researches upon microscopic plants by specialists, for the pure love of science. Their cloister studies, put to practical account, saves the destruction of one of the largest agricultural interests in Southern Europe. In like manner had the general government or individual States, encouraged the entomologist and botanist in their studies, and caused them to be turned to practical account, we should not have had to give up the cultivation of wheat in the northernmost States; our cotton crop could perhaps have been doubled, and our garden and field crops have regularly yielded a steady return to the producer.

In England, where less attention has been paid to practical zoology than with us, increased interest is taken in this subject. A botanist has just been appointed to the Royal Agricultural Society, and an entomologist will soon be elected.

## INSECTS INJURIOUS TO FIELD CROPS.

The Onion Thrips.—About the middle of August my attention was called by Mr. B. P. Ware of Swampscott, to his serious loss of onions from the attacks of a minute insect. The leaves were observed to suddenly turn yellow and wilt, and the plant died. In this way large patches became infested and turned yellow, until in two or three days these prolific insects spread over the whole field. They seemed to increase most rapidly during the unusual dry, hot weather that we experienced about the middle of last August. On the 11th of August a whole acre was thus cut off. Mr. Ware informed me that the onion plants have been more or less infested in this way for some fifteen years, but

the damage done this year was greater than ever before. This evil seems wide spread in Essex County, as not in Swampscott alone, but in Lynn, Salem, and parts of Danvers, the onion crop has been similarly infested. About \$100,000 worth of onions are raised in Essex County alone, and Mr. Ware judged that at least a tenth part was destroyed by this new pest; so that in one county alone and by one kind of injurious insect we have in one season lost \$10,000. The onion crop is next to the hay crop in value, as it is sold for cash.

On examining the specimens brought into the Museum of the Peabody Academy of Science, the leaves were found to be covered with hundreds of a minute Thrips, which by gnawing the surface of the leaves, had caused them to turn white in spots, and subsequently yellow; where they were most numerous the outer skin of the fleshy leaves was entirely eaten off, and though it was difficult to imagine that so minute insects could have caused the death of so stout and thick-leaved a plant, yet here were hundreds of the culprits in all stages of growth plying their jaws before our eyes in proof.

This insect, which occurred in both sexes and in all stages of growth from larvæ of minute size, proved to be the wheat Thrips of Fitch (Limothrips tritici), who gives an account of its appearance and habits in his "Second Report on the Noxious, etc., Insects of New York," p. 304. His attention was first called to this insect by a correspondent in Wisconsin, who found them in great numbers in blossoms of various plants. He wrote Dr. Fitch that they first "made their appearance about the middle of June, or at least they were then first noticed, so far as I have heard. For about two weeks they were found in the blossoms of wheat and of clover, causing numbers of the blossoms to wither, and in some cases the kernel was also attacked." Dr. Fitch himself never seems to have noticed this insect in New York, nor that it has ever been found in the onion, but thinks it is the species to which Dr. Harris refers in his treatise. In that work the author speaks of a "pernicious insect in the cars of growing wheat," which "seems to agree with the accounts of the Thrips cerealium which sometimes infests wheat, in Europe to a great extent." From his brief description it is probably the insect now under consideration to which Dr. Harris refers.

The various kinds of Thrips are minute, narrow-bodied insects seldom exceeding a line in length, and remotely allied to the

bed bug and squash bug in structure, but differing from them in having free jaws adapted to biting, while those of the bed or squash bug form with the other mouth-organs a sharp, hard beak, with which they puncture leaves or the flesh of their victims, when carnivorous in their tastes. These Thrips are further distinguished by their wings being very long and narrow, and beautifully fringed; and when folded over their back they do not conceal the body beneath, as is usually the case. Moreover, they are exceedingly active in their habits, running or leaping like fleas.

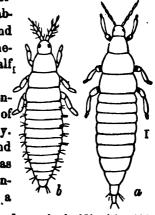
The females alone are winged, the males being wingless and closely resembling the larvæ. The body of the female is smooth and shining, uniformly greenish yellow, with no other markings; the legs are a little paler towards the articulations. The antennæ are 8-jointed, slightly longer than the head; the two basal joints are the largest; the three succeeding joints equal, regularly ovate, the 6th a little longer than the 5th; 7th and 8th minute, 7th a little shorter than 8th, each joint bearing Fig. 1.

Limothrips four large bristles. This species differs from the Euro-tritici (fem). pean L. cerealium in having but eight joints, the 7th and 8th being minute, and with no intermediate short one, as described in the European insect.

The prothorax is square, the scutellum short, crescent-shaped, and the abdomen is long and narrow, smooth and shining, 10-jointed. Length, four onehundredths of an inch, or less than half, a line.

The larva (Fig. 2), is entirely greenish-yellow, the head and prothorax of the same color as the rest of the body. The eyes are reddish. The feet and antennæ are whitish, not annulated, as in *L. cerealium*. The feet (tarsi) consist of but a single joint ending in a point.

The male differs from the larva in having 2jointed feet (tarsi) and



F1G. 2.

Larva and male of Limothrips tritici.

End of antenna of male.

7-jointed antennæ, those of the larva being 4-jointed. The second joint is exactly barrel-shaped, with two ridges or lines surrounding it, 3d and 4th joints long, ovate, the 3d being a little larger than the fourth, and with about twelve transverse lines, there being about eight on the 4th joint, from the end of which projects a remarkable tubercle, as seen in the figure. The 5th joint is square at the end, with about eleven transverse lines, and three or four stout hairs externally; 6th joint minute and spherical, while the 7th is three times as long as the 6th, and is finely striated, and with four unequal stout hairs. It is just twice the length of the female, measuring .08 inch.

The best remedy of a preventative nature against further ravages, after this insect has made its appearance, is to build a bon-fire upon the diseased patch, pull up the onions about, and throw them into it. By thus sacrificing a few onions at the outset, the evil may be nipped in the bud. For remedies less effective we would recommend showering the plants with strong soapsuds, or sprinkling them with sulphur, or the use of a solution of copperas, such as is used in killing the currant saw-fly, i. e., a solution of a pound of copperas to ten gallons of water. The use of a carbolate of lime or air-slacked lime may also be recommended.

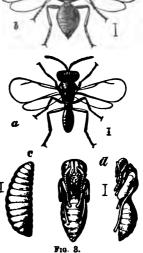
A heavy shower of rain will cause them to disappear for a while, and they probably only appear in such overwhelming numbers as this past year in consequence of the summer being an unusually dry and warm one.

The Onion Fly.—This maggot, which attacks the roots of the onion, is as abundant and destructive as ever. Its work, however, ceases about the time the Thrips is most abundant. The maggots make their appearance in Essex County about the middle of May, and by the third week in August most of them change into the pupa or chrysalis state. As a preventative measure worth adopting is one suggested to me by Mr. Ware, i.e., to sow the seeds two inches deeper than usual so that the fly cannot so readily get to it to lay its eggs.

The Imported Cabbage Caterpillar and its Parasite.—This caterpillar was fully described, and its habits and ravages fally set forth in our last year's report. During the past summer it

has been fearfully abundant in gardens in Eastern Massachu-

Were it not for the ichneumon parasite (Fig. 3, a, male; b, female; c, larva; d, pupa), which has been found to prev upon it very extensively, the cultivation of the cabbage would have to be given up in some districts. This invaluable ichneumon is one of the Chalcid family, and is the Pteromalus puparum of Linnæus. well known that the cabbage caterpillar (Pieris rapæ) was introduced into this country about the year 1857. I had supposed that the parasite had perhaps been imported with its host, but now find that it is undoubtedly a T native of this country as well as Europe. Having been favored by Mr. Francis Walker with specimens of both sexes from England, labelled by



him Pt. puparum, I found that our Parasite of the Imported Cabbage But-

specimens did not differ specifically. Further, Mr. Walker wrote me that there were specimens of the same species in the British Museum taken in Hudson's Bay territory in 1844. During the past summer Mr. P. S. Sprague sent me specimens which had been raised from the Rape Caterpillar in Vermont. Mr. J. A. Lintner has also published a note in the "American Naturalist" stating that he had reared this parasite from the same kind of caterpillar, and previously to this Mr. S. H. Scudder had received numerous specimens from Mr. A. G. T. Ritchie of Montreal, Canada, who, if I understand his letter aright, first observed these chalcids upon the cabbage leaves in July, 1870, when the caterpillars were abundant. On the 23d of August of the same year he had some of the parasites hatch out. To Mr. Ritchie, then, is due the credit of being the first to make known the history of this invaluable insect.

So that the parasite seems to cover even a wider field than its host, and probably preys on our native cabbage butterfly, the *Pieris oleracea*, as in Europe it preys on *Pieris brassicæ*, the caterpillar so destructive to the cabbage there.

The male of this Pteromalus is a beautiful pale-green fly, with the body finely punctured and emitting metallic tints; the abdomen, or hind body, is flat, in dried specimens with a deep crease along the middle of the upper side, and it is much lighter in color and with more decided metallic reflections than in the rest of the body. The antennæ are honey yellow, with narrow black wings. The legs are pale honey-yellow. It is .08 inch to a tenth in length.

The body of the female, which would be thought at first to be an entirely different kind of insect, is much stouter, broader, with a broader oval abdomen, ending in a very short ovipositor, while the underside of the bedy near the base has a large concal projection. It is much duller green than the male, and the body is more coarsely punctured. The scutellum of the metathorax is regularly convex, not keeled, in both sexes. The antennæ are brown, and the legs brown, becoming pale towards the ends, the ends of the femora being pale; the tibiæ pale-brown in the middle, much paler at each end, while the tars are whitish, though the tip of the last joint is dark. It is from a line to a line and a third in length. It differs from Harris' Pteromalus vanessæ in the little piece known as the scutellum of the metathorax being smooth, not keeled, and by its darker legs.

The larva is a little white magget about a sixth (.17) of an inch in length. The body consists of thirteen segments, exclusive of the head, and is cylindrical, tapering rapidly towards the head, while the end of the body is acutely pointed. The chrysalis is whitish, the limbs being folded along the under side of the body, the antennæ reaching to the end of the wings; the second pair of legs reaching half way between the end of the wings and end of abdomen; while the tips of the third pair of feet reach half way between the second pair of feet and the end of the abdomen. It is from a line to a line and a third in length.

In the middle of September Mr. F. W. Putnam handed me one hundred and ten chrysalids, all but two of which were infested by these parasites in both the larval and pupal states; while from other chrysalids the adult chalcid flies were emerging. They continued to emerge until late in the autumn. The infested chrysalids of the butterfly could be easily distinguished by the livid and otherwise discolored and diseased appearance of

the body, while those unattacked had preserved the fresh color, and the tail moved about readily; the diseased ones becoming stiff and more or less dried. Mr. Putnam thinks that at least two-thirds of the chrysalids of this butterfly, hundreds of which had in the early autumn suspended themselves about his house and fences, had been attacked by these useful allies.

On opening the body of the infested chrysalids I found about thirty parasites in different stages of growth, in one case thirty-two, in another only twelve. We can readily see how efficient these minute insects become in reducing the numbers of their hosts. A large proportion of the Pteromalus undoubtedly winter over in the body of the chrysalis, the adult insects appearing in the spring. In England Mr. Curtis found the fly in June, so that evidently there is an autumn and spring brood of flies.

Another parasite is the larva of a parasitic fly, Tachina (Fig. 4, enlarged three times), the adult form of which closely resembles the common house-fly. It is a flattened, cylindrical maggot, both ends of the body rounded much alike. The mouthparts are partly aborted, there being only two Larva of Tachina. retractile horny mandibles by which the fatty portions of its host is eaten.

Besides this large Tachina I found a minute fly in the same bottle with a number of the chrysalids of the butterfly, and am inclined to think that it may have lived parasitically in them, but would not be confident that it is so. It is a small black fly, about a line in length, and with dark wings.

The Cabbage Web Moth.—My attention was first called to this moth, now almost cosmopolitan in its distribution, in September and October, 1870, at the Agricultural College at Amherst. The little green caterpillars were quite abundant on the under side of the outer leaves of the cabbages on the college farm, and their web-like, delicate cocoons were found attached to the leaf in depressions or folds. Afterwards a correspondent in Michigan sent me specimens of the worm, the cocoon and moth, stating that it was doing great damage to the cabbages there. The season at Amherst, as all over New England in 1870, was

very warm and unusually dry, which accounts for the unusual increase in this insect.

This insect, well known in Europe, whence it has been carried all over the civilized world, was first noticed in this country

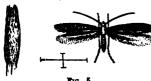


Fig. 5. Cabbage Web Moth.

by Dr. Fitch in 1855, who gives an account of it in his "First and Second Reports," &c., having observed it in Illinois, but not in New York. He called it *Cerostoma brassicella*, but it is undoubtedly the well known European

Plutella xylostella Linn. (Fig. 5, moth and cocoon). Though the insect has been observed in this country only late in the autumn when the cabbages have headed, yet these worms, as Dr. Fitch suggests, probably belong to a second brood. Stainton, in his "Manual of British Butterflies and Moths," states that the moths fly in May and August, while the caterpillars appear in June, July, and a second brood again in September. Dr. Fitch suspects that the first brood of caterpillars may feed on the young cabbage plants in early summer, and thus do more mischief than in the autumn when the heads are fully formed.

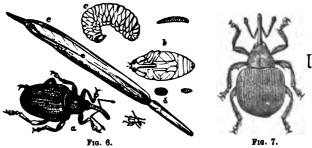
The caterpillar is a little pale green worm, with small, stiff, dark hairs scattered over the body; it is a quarter of an inch long. When about to transform it spins a beautiful open network of silk as a cocoon, open at one end, of white silken threads; it is a third of an inch long.

The moth itself is pale gray, with the head, palpi and antenne white, but the latter are ringed alternately with white and gray on the outer half. The rest of the body is gray, except on the under side, and on the middle of the thorax, where there is a broad, white, longitudinal band, which when the wings are folded is continuous with the white band along the inner side of the wings. The two front pair of legs are gray, with the tarsal joints ringed narrowly with white; the hind legs are whitish and hairy. The fore wings are gray, with a conspicuous broad, longitudinal, white band along the inner edge, and extending to the outer third of the wing; this band sends out three teeth towards the middle of the wing, the third tooth being at the end of the band. There is a row of dark dots along the outer edge of the stripe; a row of blackish dots along a pale shade just outside of

the front edge of the wing, and two diverging rows of blackish dots diverging upon the tip or apex of the wing. The fringe is marked with a few dark spots. The middle of the wing next the white band is darker than the front edge, while a faint yellowish shade runs along the middle of the outer half of the wing towards the tip, enclosing a few black dots. It expands a little over half an inch.

Should young plants be attacked by the worms, the best remedy would be to shower them with soapsuds. For the autumnal brood of worms the plants should be plentifully showered; and if this is not efficacious, the worms should be picked off by hand, the cocoons especially.

The Radish Weevil.—About the year 1857 I found in Maine upon the radish leaves a specimen of a weevil, which I cannot distinguish by Curtis' description and figure from the European Ceutorhynchus assimilis, Payk. Fig. 6, a, beetle, c, larva, b, pupa, e, pod with hole out of which the grub has come, d,



Radish Weevil.

earthen cocoon. (From Curtis.) (Fig. 7 drawn from an American specimen).

As it has not before been noticed in this country, and may become in future years more or less of a plague, we give a brief description of the insect and its habits.

The beetle is minute and pale-gray, with a remarkably long, slender, curved snout, from the middle of which arise the long elbowed, slender antennæ; the basal joint is long and slender and succeeded by seven spherical joints; the oval club pale at tip, consisting of four joints. The body is black, but so densely covered with gray, flattened hair and scales, that it seems to be uniformly

pale-gray. These hairs become broad, flattened scales on the sides of the body. The prothorax is triangular, seen from above, swollen on the sides, and the head, exclusive of the snout, is very small. The body behind is unusually broad; the wingcovers have each nine (Curtis mentions only eight) longitudinal, fine, punctate furrows, the ridges between being much flattened. The legs are rather short, and pale-gray like the rest of the body. Curtis mentions that the hindermost thighs have a short, thick tooth beneath. I find one on the thighs of both the middle and hind legs. However, the insect may be considered as identical with the European species, until proved otherwise by comparison of specimens, as it has probably been imported in radish and turnip seed. In Europe this weevil was first observed among turnip seed, where as a white magget it devours the seed in the pods. When fully fed it gnaws a hole through the side of the pod, out of which it escapes, and makes its way into the ground two or three inches below the surface. where it forms a brown, oval cocoon of the grains of dirt. Here it remains three weeks in the pupa state, and by the third week in July the beetle appears. Mr. Curtis, whose account we have reproduced, thinks that the female lays its eggs in the embryo 'pods.

The Pitchy-Legged Weevil.—Another weevil has for several years been not uncommon in Essex County, which in England, from which it has been imported, is often, as Mr. Curtis says, "a dreadful pest in gardens, committing sad ravages on vines in hot-houses and on wall fruit, during the night, when they emerge from their hiding-places in old walls, from under the bark, and clods of earth, to revel upon the branches of the new wood in April, or to feed upon the young shoots, which soon become black. They likewise injure raspberry plants in spring, by eating through the flowering stems and leaves, and they nibble off the bark, and eat out the buds of apple and pear trees as early as February or March." But they are said by Curtis to do still more damage to pease, turnips, and young winter-plants, as savoy, kale, broccoli, &c.

I have detected this weevil on the Beach Pea during the last week in July, and it is not uncommon in gardens, and even, if I

am not mistaken as to the identity of the insect, will enter ferneries and nibble the ferns and make considerable havoc among the plants before its presence is suspected.

This insect, which is likely to prove annoying, is the Otiorhynchus picipes of Fabricius (Fig. 8, enlarged). The body is pitchy brown, and covered with microscopic, pale scales, resembling a scallop shell, being marked with a few prominent ribs. Indeed, many of the weevils seem to be provided with scales like those of butterflies. Poduras, and a few other insects. The beak, so short and slender in the radish weevil, is here broad and short, square at the end, from

which the elbowed reddish-brown antennæ Pitchy-Legged Weevil. The head is a little darker than the rest of the body, and is coarsely punctured. The prothorax is coarsely granulated, the granulations being arranged in irregular rows. wing-covers are adorned with about eleven high, rounded, longitudinal ridges on each cover, and with coarse punctures along the furrows between them. There are also about twenty rows of pale dots along the wing-covers, consisting of scales. legs, including the claws, are rather paler than the rest of the body. The body is also covered with scattered pale hairs bent down on the surface, especially on the top of the head; these hairs remain after the scales are rubbed off. It is a quarter of an inch in length.

## INSECTS INJURING THE RASPBERRY.

The Raspberry Saw-Fly.—In an article contributed to the report of the Board of Agriculture for 1870, and entitled "Injurious Insects new and little known," I incorrectly stated that a little beetle, the Byturus unicolor, ate holes in the leaves of the raspberry, as well as the flowers. Mr. F. W. Putnam has since drawn my attention to the fact, which my own observations have corroborated, that two insects produce the mischief: the beetle eating the fruit-buds and flowers, while the injuries to the leaves are caused by the larva of a saw-fly—the Selandria rubi of Harris (Fig. 9, and larva, both enlarged), who first noticed it in 1845.

The worm is cylindrical, like a caterpillar in appearance, be-



Fig. 9 .- Raspberry Saw-Fly and Larva.

ing quite unlike its congener, the viscid pear slug, the body being covered with fine hairs, giving it a somewhat velvety aspect. It is pale-green, with "six dorsal rows of tubercles, having two black bristles and four lateral ones on each side bearing white bristles." Mr. E. Norton, from whom I have quoted, and to whom I am indebted for a single female for description, and to serve as a subject to be drawn for the above cut, farther remarks in his treatise on this family of insects, that the false caterpillar appears in May. I have seen it early in the summer, in my garden. From its habit of feeding early in the morning or at night, it is scarcely seen, and is difficult to reach. The bushes, however, should be well shaken, and such leaves as have been riddled by them carefully examined, as the worms may often be thus detected.

The adult female fly is shining black on the head and thorax, while the tips of the mandibles are reddish and three-toothed. The shoulder-tippets (tegulæ) and base of the wings are honey yellow, while the wing veins are brown. The legs are honey yellow; the thighs (femora) brownish, as also the tips of the hind tibiæ. The third, fourth and fifth abdominal rings are pale yellow, the remainder of the abdomen being brownish. This insect differs from the female of the well known rose saw-fly, which is almost entirely black, in the broad light band on the abdomen, in the paler veins of the wings, the different form of the cells, the thickened spot (pterostigma) being less rounded, and in having paler legs. It is also a little larger, measuring just a quarter of an inch in length.

## INSECTS INJURIOUS TO FOREST TREES.

The Chestnut Weevil.—The chestnut is often infested by a

large white maggot (Fig. 10, larva of Balaninus and chestnut infested), with a yellowish head, which attains its full size at the time the nuts drop. It is found in nuts sent to market, and it is probable that while some of the maggots gnaw their way out, and enter the ground in the autumn to





Fig. 10.

Chestnut Maggot.

transform, others delay until the spring. Its habits, however, are not known, nor even whether it be the same as the weevil of acorns, which has been proved by Mr. Riley to be the young of the Balaninus rectus of Say. We introduce from Dr. Harris' "Treatise on some of the Insects Injurious to Vegetation" a cut of Balaninus nasicus (Fig. 11), which is either the parent or closely similar to the parent of the chestnut maggot.

Fig. 11. Balaninus nasicus.

The Chestnut Borer.—The chestnut tree itself is remarkably free from borers, and no insect has hitherto been known to bore into the trunk. My attention has, however,

known to bore into the trunk. been called by Mr. R. B. Grover, a student in the State Agr. College, to the fact that the Arrhopalus fulminans Fabr. (Fig. 12, enlarged twice), one of the family of Longicorn beetles, bores in the trunk. I know nothing farther concerning its habits, nor of the appearance of its grub. The beetle itself is blackish brown, with slight dark-blue reflections; the legs and antennæ

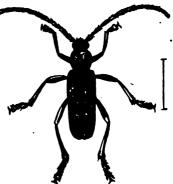


Fig. 12 .- Chestnut Borer.

are of the same color, the latter being scarcely larger than its body. The top of the head, and the sides of the prothorax, and under side of the body, are covered with a pale-gray pile,

while certain silver markings on the wing-covers are composed of similar close-set, fine hairs. Those hairs on the sides of the prothorax enclose a conspicuous black spot, while the top is black, and more coarsely punctate than the wing-covers. The latter are each crossed by four acutely zigzag lines, composed of microscopic hairs, forming w-like bands on the elytra, the basal lines being less distinctly marked than the others. The ends of the wing-covers are also tipped with gray, especially on the inner side of the end. The legs are pitchy brown with light hairs, and with a reddish tinge on the terminal joints (tarsi). It is a little over half an inch long.

The Oak Callidium.—This is also a new borer in the cak, specimens having been taken by Mr. Alfred Poor from a white oak stick, June 20th, and presented by him to the Essex Institute several years ago. It is undoubtedly closely similar in its habits and in the form of the larva to the Grape Callidium figured in our last report. This is the Callidium variabile, and is one of our more common species of the genus. It is closely allied to C. amænum, but is larger, and less coarsely punctured, while the antennæ are more reddish; the scutellum is concolorous with the wing-covers. The body, legs, except the femora, which are blackish in the middle, and antennæ, are reddish, the tips of the joints of the latter dark, and on the back of the prothorax are two black spots, often confluent. The head is black. The wing-covers are prussian blue, smooth, finely punctured, with rather thick, fine, black hairs, bent downwards. Specimens recently changed from the pupa state are brown, and the species is exposed to considerable variation, as its name indicates. The male is just half an inch long, the female .60 inch.

The Black Elm-Tree Borer.—This is a new borer in the elm, a tree also remarkably free from borers. I am indebted to Mr. G. D. Smith, of Boston, from whose immense collection of beetles the specimen I here describe was taken and given to the museum of the Peabody Academy. It is the Physocnemum brevilineum Say (Fig 13, nat. size). It is a singular-looking beetle, with a round, flattened prothorax, and wing-covers contracted in the middle, and not covering the tip of the abdomen,

while the thighs are unusually swollen. The antennæ are

about two-thirds the length of the body, flattened towards the end, and somewhat serrate. The body above is velvety black, and brown-black beneath. The head is black, and coarsely punctured, and the prothorax is covered with short, dense, black hairs, like velvet. The wing-covers are Prussian blue in color, bent, corrugated, with an

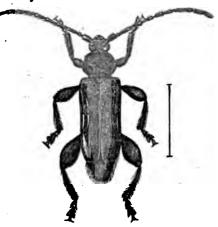


Fig. 13 -Elm-Tree Borer

interrupted ridge just outside of the middle of each cover. They are covered with fine, black hairs, bent over. There is a pair of parallel, short honey-yellow lines in the middle of each wing-cover, with a third one a little in front, making in all six streaks. The legs and feet are black. It is a little over eighteenths of an inch in length.

## THE COUNTY SOCIETIES.

The returns of the various county societies, an abstract of which is presented as the second part of this report, indicate a high degree of prosperity. The policy, which has now been adopted by nearly every society, of owning land and fixtures, has involved many of the associations in debts of varying amounts, but in most cases the real and personal property greatly exceeds the debts, while, in prosperous years, a considerable reduction of the latter is quite practicable. It must be apparent that any considerable amount of liabilities is a source of embarrassment, curtailing the usefulness and efficiency of a society, and preventing many expenditures which are desirable and calculated to promote the good of the community.

The amount set apart for the printing and distribution of the Transactions, for example, is, as a general rule, far too small. The volume of Transactions is the permanent record of the society, the standard by which it will be judged in the future, and

the means of conveying instruction to the public. Money judiciously invested in publication is better calculated to promote the objects for which the society was organized, than money distributed in small cash premiums. If it goes out in driblets, it is not likely to accomplish any permanent results.

The value or efficiency of a society depends chiefly upon the management. If it adopts a low standard of excellence and aims to do all its work and accomplish its objects through the bluster of its exhibition, which lasts but a day or two at most, it can hardly expect, with any show of reason, to rouse the spirit of inquiry and improvement, and to do the good which the State had in view when it granted its charter and endowed it with the annual bounty from its treasury.

The show is ephemeral at best. It is no doubt a good thing, so far as it goes, to get people together, and to furnish them the means of rational enjoyment, social intercourse and instruction. Some societies stop here. They see no duty higher than this. Their capacity seems to exhaust itself with one spasmodic and tremendous effort. The idea of any latent possibility of benefiting the public by exciting thought and emulation, or by a search after new facts and the discovery of new truths, seems not to enter into their programme of operations. The encouragement they give for accurate experiments designed to improve the processes of farming or to develop the material interests of the people, bears no proportion to what they give for trifles light as air.

Now that a society is capable of acting on a higher level, and adopting higher aims, and attaining greater results than many of our societies do, is clear enough, because it has been done, and is done every year, by some societies, and can be done by any one that will go the right way to work. To ascertain this right way, with all local considerations taken into view, a committee to investigate and report some complete plan of operations would be able to suggest what reforms are needed. They would have the advantage of the experience and history of those societies whose success has been most marked. They would find out how committees on different subjects are made up, and how it is that exhaustive and well-considered reports are the rule in all well-managed societies, rather than the exception. They would learn what means are taken to create an

interest in the prosperity of the society throughout the farming community. They would be able to devise methods of varying the premium list, or to suggest changes in the mode of awarding prizes. Their report might be expected to contain many practical suggestions by which the usefulness of the society would be greatly increased, and through which it could return to the people of the Commonwealth some fair equivalent for the bounty that has been bestowed upon it.

I often hear the officers of societies complain that all the work falls on one or two individuals; that the people do not take hold and do the work; that it is difficult to get up any enthusiasm: as if this were any explanation of the torpidity of the society. If such a state of things exists, who is responsible for it? Is it not the fault of the management itself? Has there been a rightly directed effort to "bring out" the young men, or have they been left out in the cold? If an orator is to be chosen, has he not been called from abroad, in the shape of some lawyer, or minister, or politician, instead of giving the native, and perhaps too modest, talent of the society itself, an opportunity to make its appearance? If a display is to be made at the annual dinner, is there sufficient dependence upon the members of the society, or has the management looked abroad for higher sounding names?

One of the grandest missions which a society has it in its power to accomplish is the education, the bringing out, so to speak, of a class of young men, farmers' sons, and leading them to feel that there is a work for them to do. Nothing builds up a young man so rapidly as responsibility. The mere opportunity is hardly enough; modesty may compel him to shrink from seeking it, but once thrust it upon him, and he grows up to it in a manner which often astonishes himself. He discovers in his own mind, resources of which he, perhaps, did not even know the existence. Success teaches him self-respect, and confidence in him gives him character.

Now if this class of the members of a society had been persistently encouraged through a period of ten years, how could there be any need of co-workers in the objects and purposes of the institution? How could there be any serious difficulty in finding suitable men to act as chairmen of important committees,—men both willing and capable of writing instructive and useful



reports,—and to aid in building up the reputation and influence of the society? A society ought to aim not only to make better farmers, but better men; and it can do it by encouraging the growth of native talent and relying more upon home products.

Nothing is more true than that progress is as essential an element in associated action as it is in the natural world. No society, any more than an individual, can remain stationary. If it does not make constant and persistent effort to advance, it will be sure to retrograde. If it does not constantly grow better, it will be quite sure to grow worse. It is therefore its duty to progress, to do more and to be more from year to year, than it ever was before.

It cannot be denied that our agricultural societies have, as a whole, been of vast benefit to the material interests of the Commonwealth. Apart from the merely social and educational influences which they have exerted, they have done much to improve both our stock of domestic animals and our modes of practical farming. If, as some pretend to affirm, the actual number of horned cattle has decreased in some sections of the State, it cannot be denied that the quality of those we have, and their actual money value, have been materially enhanced. This addition has come chiefly from the introduction of improved breeds of cattle, and the extensive use which our farmers have made of them in obtaining grades which have been raised up to take the place of much of our old native stock.

As an example of this gradual change, a large part of it due directly or indirectly to the encouragement given by the societies and to the opportunity which their exhibitions afford to display improved stock, and gain the credit which is sure to follow such enterprise, it may be stated that twenty years ago, there were but seventy-five pure-bred Jersey cattle in the State. I knew at that time every herd owned among us, and took pains to collect the facts about them. If I recollect aright, there was then but one herd of them west of the Connecticut River, and in the eastern part of the State they were but little known. Now there are single herds containing a greater number than that, and many a town which contains more pure-bred Jerseys than could have been found in the whole of New England at the time of the publication of my first annual Report. In addition to this, the grade or half-bred Jerseys are very common in

almost every part of Massachusetts, and their characteristics and peculiar fitness for the butter dairy are generally understood and appreciated.

The same may be said of nearly every other pure breed of animals originally imported from Great Britain, though some of them are better known and chiefly confined to more limited localities especially adapted to them. The number of extensive and enterprising breeders of Ayrshires has increased in a similar proportion within the last twenty years, and both pure-bred and grade animals of this breed are almost universally diffused throughout the Commonwealth. There can be no reasonable doubt that the average animal products of our dairy and other stock have been considerably increased in consequence of this improvement.

Nor should it be forgotten that better and more humane treatment has gone hand in hand with this general change and improvement in our stock. If a farmer has an animal in which he takes a peculiar pride, or in which he feels any special interest, he will naturally feed it a little better, give it a little better shelter and attention, than the common stock of the country used to get a quarter of a century ago. I have no doubt that the general treatment of all our stock is vastly better than formerly, and that this improvement is to a very considerable extent due to the introduction and keeping of the improved breeds of cattle.

A generous ambition to excel in stock, or to keep only the best, has its influence, also, in other ways. It is both the result of and the incentive to increased enterprise and thrift. How far the general improvement in farm buildings may be ascribed to this source it may not be easy to determine, but it is natural to suppose that it has had some connection with it; that is, that better barns are the result, in part, of greater intelligence and a greater knowledge of the animal economy. A very large proportion of the barns throughout the State are provided with commodious cellars, and most farmers would about as soon think of building a house without a cellar as a barn, so important is this convenience regarded in the economical management of the farm.

These general improvements in the farming districts are a source of just pride and gratification, and they seem to furnish

a sufficient answer to those who say that our soil is sterile, our climate inhospitable and our agriculture in the decline. If this were true, our farming population furnishes a very striking anomaly, for statistics show that, with reference to most of the staple products of this country, the yield of an average acre in Massachusetts is greater than that of any other State, and that the money value of the product of an average acre is greater; while any impartial traveller with an extensive observation both throughout the United States and the best farming districts of Europe, would admit that there is no farming community in the world presenting, as a whole, and with fewer exceptions, greater evidences of thrift, prosperity, enterprise and comfort, than our own. There may be, and there doubtless are, wealthier communities, countries where the landed property is concentrated and held in fewer hands, but for a free people, working their own farms, and dependent upon their own honest labor alone, it seems to me our country towns present the practical proofs of a remarkable material prosperity, which is at once the result and the criterion of success.

CHARLES L. FLINT,
Secretary State Board of Agriculture.

BOSTON, January 24, 1872.

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